COASTAL HAZARD MANAGEMENT PLAN

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New Jersey's Shoreline Future
Preparing for Tomorrow

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DRAFT

APPENDICES

Prepared for
New Jersey Department of Environmental Protection

Prepared by
Institute of Marine and Coastal Sciences
Rutgers the State University of New Jersey
Summer, 1996

Appendix A

July 12, 1994 Workshop
Summary Report

NEW JERSEY'S SHORELINE FUTURE
PREPARING FOR TOMORROW

REASSESSMENT OF THE NEW JERSEY
SHORE PROTECTION MASTER PLAN

A WORKSHOP ON COASTAL ISSUES, SHORE PROTECTION, AND MANAGEMENT STRATEGIES
July 12, 1994

Compiled by Susane Pata

Institute of Marine & Coastal Sciences
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Meeting Attendees

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Jim Sinclair, NJBIA
Peter Valesi, Killam Associates
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Ken Smith, American Shore & Beach Preservation Association
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Introduction

As with all coastal states, New Jersey has provided financial and technical assistance to help shorefront communities cope with shoreline erosion. These efforts began in the 1940's with support for construction and repair of shore protection structures such as groins, jetties, and seawalls. In 1981, the state adopted a Shore Protection Master Plan to set priorities for the expenditure of bond funds for shore protection. This plan enabled communities to respond to erosion events which had already occurred; it did not address mitigation of coastal hazards as a shore protection alternative, nor did it assist local officials in assessing the costs and benefits of various shore protection options.

In response to the cumulative effect of recent storms on our coastal communities, the need to develop proactive shore protection efforts, and to cover gaps in the existing Shore Protection Master Plan, the state has awarded a grant to the Institute of Marine and Coastal Sciences to help local decisionmakers identify and select strategies to manage as well as to mitigate the effects of severe storms and erosion along our shoreline. This study will include a review of current shore protection practices and an evaluation of strategies used by other coastal states.

Another key objective of the study is to stimulate awareness among New Jersey's youth and the general public about shore protection issues. This issue is not limited to property owners at the shore, but should be of concern to all New Jersey citizens who visit the shore and benefit from this valuable state resource. With heightened awareness of the social, environmental, and economic costs and benefits of shore protection, the aim is to help communities develop proactive approaches to shore protection rather than the react and recover philosophy which has dominated our state's past efforts in shore management.

Overall project responsibility will reside with Dr. Norbert P. Psuty, a coastal geomorphologist, who is the leader for the project on New Jersey's Shoreline Future. Michael P. De Luca, Associate Director of the Institute of Marine and Coastal Sciences, is also assisting with the project and is responsible for the science education component.

A workshop was held on July 12, 1994 to brainstorm on potential shore protection alternatives in three thematic areas: Shoreline Management Strategy, Socioeconomics, and Policy. Each Thematic Working Group was led by a Chairperson who served as a facilitator for discussions in each session. Chairpersons were asked to solicit a list of priority shore management issues from the participants and each chair posed a series of charges/questions to their groups. Each Chairperson summarized the results of their group deliberations in a final plenary session. Written summaries were prepared and submitted by the Chairs following the workshop.

This is the report from the workshop. It is intended as one of many documents developed that identify and address coastal issues. Further dialogue is required to follow up on the process that has herewith been initiated. The general headings of concern are as follows:

Strategy Issues:

* What are the most important shore management issues that must be

addressed by the project team? Which of these issues should be addressed by White Papers?

* What coastal research and engineering factors/properties must be considered in order to select the most appropriate shore management strategies?

* How would you characterize an area or coastal reach that is best suited to a "hard" management strategy? A "soft" management strategy?

* What are the shore management alternatives which can be used to mitigate erosion?

* What innovative or new approaches to shore management should be investigated further for potential applications in NJ?

Socioeconomic Issues:

* What are the most important socioeconomic issues associated with shore management that must be addressed by the project team? Which of these issues should be addressed by White Papers?

* Should the costs associated with shore management be allocated any differently from the present method?

* What methods are best suited to ensuring public participation in the project to reassess shore management?

* What changes in shore management strategies could enhance public access to the shore?

Policy Issues:

* What are the important legal/policy issues associated with shore management that must be addressed by the project team? Which of these issues should be addressed by White Papers?

* Which regulatory impediments (state and federal) are burdensome to local and country authorities responsible for shore management? What measures should the project team investigate to mitigate these impediments?

* What shore protection policies have proven successful for other coastal states, especially those with high population density?

* Are current insurance programs adequate to meet liability concerns? What changes to current programs should be considered? How will proposed changes in federal flood insurance programs affect shore property owners?

Strategy Breakout Working Group (Dr. George Klein & Dr. Michael Bruno, Group Chairmen)

This discussion group focused on four areas: 1) strategies and associated needs in coastal areas; 2) White Paper topics; 3) data sources; and 4) groups with whom to interface for outreach.

The group discussed a wide range of strategy issues, with several emerging and demanding immediate attention. These are:

* Incorporating local needs into the shore protection strategy. Differences in local shore processes, local responses to shore erosion by coastal communities, community focus with respect to its businesses, economies and goals, for instance, will require different shore protection strategies to be established and determined. Discussions with individual communities will aid this effort.

* Issues surrounding management responses to coastal emergencies and disasters. One major point raised was that various state and federal emergency agencies (for example, FEMA and the NJ State Police Emergency Management Office) are limited in distributing emergency response funds when planning is absent or lacking. Plans should be developed, adopted, and made available to these agencies in advance so that a rapid response to emergencies can occur, including distribution of financial assistance. Without such plans, disbursement of relief funds is slowed, or worse yet, eliminated.

* A false belief that current codes differ from community to community. Local governments have no control over national codes. "New Jersey has codes that must be followed to the letter," stated Clark Gilman, Section Chief of FPM. Codes are strictly enforced by licensed officials in each municipality.

* The planning process. The final report must distinguish between post-disaster strategic planning and long-term planning. The two pose different goals and require very different strategies, even though they are linked.

Other issues that involve strategic planning addressed by this group include:

* evaluating and planning for the long-term impact of proposed and current projects of shore remediation by the US Army Corps of Engineers
* reexamination and redefinition of the "reach" concept (Such a definition is required in order to develop strategies that uniformly

impact each region's shoreline.)
* any public discussion regarding shore protection must proceed carefully and in an informed way -- complete disclosure of all plans, projects and their public consequences is encouraged
* any strategic planning document developed from this program must provide communities, counties, and state and federal agencies with options; it must also describe the consequences of each option, before planning decisions are made
* reducing loss as a result of flooding; this is an expansion to the project's charge when dealing with low bayside area flooding, because the project's main focus is on the oceanfront; it is, however, an area to be considered when considering how management on the oceanfront affects the bayside
* a need exists for a stronger county role in coordinating municipal projects
* any planning strategies must incorporate the provisions of the Kerry Bill (The National Flood Insurance has an acquisition component called section 13.62. It was implemented to acquire properties. The key provisions of the Kerry Bill permit acquisition prior to damage as a mitigation process. This bill passed on September 23, 1994.)

Strategy planning comments from the group included:

> caution should be used in post-event redevelopment
> other means besides acquisition should be included in the redevelopment plan
> strategies should be tailored to what is being protected
> a triage theory should be considered where a stepped buffer zone is created, rather than having development prohibited
> campsites should not be permitted on retreat areas
> case by case scenarios should be based on responding to specific situations, answering such questions as, "What are the effects of actions on neighboring towns?" and "How do soft and hard solutions impact and impinge on each other?"

The group proposed the following five topics for White Papers:

- the use of GIS in the planning process, including both state and federal databases
- an inventory of existing data made available to coastal communities, counties, and state and federal agencies for planning purposes
- a review of protection priorities of individual coastal municipalities
- post-disaster versus long-term strategies
- an historical review of the experience in coastal planning and response to disasters, including revision of plans of other coastal states.

Another White Paper topic mentioned within the group was that community needs and capabilities should be considered when selecting appropriate shore protection strategies. One example is when the township of Lavallette found that its dunes were not big enough to withstand the December 1992, Class IV storm. Another example is how the Borough of Mantoloking had the option to utilize the Upton-Jones Amendment. The option was available to those owning housing in imminent danger. But because of delays, the imminent danger passed and the option could no longer be implemented.

Some random comments from the group included the following:

> Presently, beach nourishment is not considered a mitigation measure by FEMA. Although FEMA provides support for engineered beaches, funds for hazard mitigation cannot be used to construct dunes, despite the fact that dunes are a primary strategy for protection.

> Many coastal municipalities are left on their own to conduct their own form of management because many do not want to be told what to do (home rule attitude).

> A group of towns, along with the county, may opt to provide money for hazard mitigation in order to ensure organization at a county level.

> There were a few concerns that surfaced with respect to the Kerry Bill. Some of these concerns were based on misconceptions of the bill. The following are clarifications on the confusion. The intentions of the Kerry Bill do not oppose FEMA's concept of acquisition. It has nothing to do with FEMA's interpretation. The Kerry Bill is capable of covering the costs of increased construction.

The group spent a great deal of time identifying available data sources. The list is as follows:

* County Planning Offices:
    - -land use
    - -zoning
    - -population
    - -traffic patterns
    - -usage
        - -tax base
        - -economic data
* Office of State Planning

(This is the same as county planning -- region-wide.)

* FEMA, US Army Corp of Engineers, State Office of Emergency Management:
    - -physical processes: waves, currents, tides, beach profiles
    - -Corps reconnaissance studies
    - -storm damage reports

-rules regarding disaster assistance ("engineered" beach concept)

* local municipalities
  - -building codes
  - -property evaluation
  - -historical information regarding shoreline position
  - -structures
* census bureau
  - -population data
  - -income distribution data
* State GIS Program
  - -geographic databases
  - -establish a database to overlay information

(The current problem is that there is no State GIS policy.)

* Division of Tourism
  - -nature of tourist population
  - -spending habits of tourist population
  - -income from tourism
  - -tax revenues generated from tourism
  - -traffic patterns
* utility companies
  - -business income data
  - -business power usage data
  - -population data
  - -PSE&G hazard maps and complete TIGRIS files
* NTIS
  - -all forms of coastal oceanographic data
* National Weather Service
  - -meteorological data
* Beach Erosion Commission -- Office of Legislative Services
  - -findings from hearings and investigations on shore and beach erosion
* NFIP
  - -flood studies
* aerial photography

(To enable a better study of shoreline behavior.)

The group also compiled a list of Outreach Groups with whom the planning process must interface. These are:

* mayors and other governing bodies
* the entire NJ Legislature
* insurance providers
* conservation organizations
* professional associations of engineers and planners
* the Homeowner's Association
* operators of marinas, commercial and recreational fishing, and boardwalks

* NJ Recreation and Park Associations
* tourism groups and associations
* lenders, utilities, and health care providers

Socioeconomics Breakout Working Group (Dr. Peter Parks, Group Chairperson)

Participants believed that the identification of research priorities should follow strategic thinking principles. According to these principles, data need to grow out of the planning process, following rather than leading planning. Thus, identifying White Paper topics prior to specifying goals, objectives, and strategies of the reassessment may be premature. With this caveat, the working group did identify several areas that are likely to be required regardless of the outcome of strategic thinking.

The first charge addressed to the group was: **Major Socioeconomic Topics That May Require White Papers.** Approximately seven issues pertaining to this charge were mentioned within the group. They were as follows:

* assessing the 1981 Shore Protection Master Plan as a resource through its data and methodology
* quantifying the magnitude and distribution of benefits from protection through tourism expenditures and multiplier effects
* quantifying the magnitude and distribution of protection costs via public and private costs
* specifying the spatial and temporal scale for the reassessment study by identifying stakeholders
* identifying linkages between management alternatives and environmental or natural resource indicators, through coastal hydrogeological processes, habitat effects and fishery effects
* specifying how multiple impacts, for example, noneconomic impacts, will be incorporated by inside/outside benefit-cost analysis
* clarifying shoreline management options by linking it with the Strategies Breakout Working Group in relation to engineering methods, non-engineering methods, and acquisition

Comments on the first charge included the following:

> socioeconomic forces are among the most important issues driving the morphology of the New Jersey shoreline
> the value of tourism within the State, as well as the value of tourism along the coastal region, should be considered
> when doing surveys on tourism, do not include any limitations as to "who" frequents the shoreline; many surveys already misrepresent the community by doing this (i.e., include people who own condos, include the campgrounds, and include the State beaches)
> the main focus of the Shore Protection Master Plan is on the beach area, because what happens on the beaches affects the bays

> the study must be integrated by looking at the high risk area, not so much the estuaries; this study is part of an overall NJ Environmental Plan and is limited by time and funding
> there should be some progression in the reassesment of the 1981 Plan, whereby the discussion does not echo the 1981 Plan
> there is a suite of qualitative measures to be considered as in Figure II-B.3 of the Master Plan, necessitating some assessment of high medium to low medium
> there should be a paper and/or risk assessment with mention of erosion rates and delineation of rates in a time series so as to see if there is an association and whether it is positive or negative
> different types of risk assessments should be used with different types of risks
> getting a specific value for a beach is very unique, as the value of each beach differs; but even though this process is difficult, the issues should be resolved (The Shore Protection Master Plan uses one value for shore protection.)

The second charge was: **Considerations in the Allocation of Shoreline Protection Costs.** Although the group felt that allocation of shoreline protection costs should be considered (not necessarily matched with) as an equity issue, the efforts within the project are not driven toward resolving this. Many aspects of the "equity" issue surfaced as the group felt that the distribution or incidence of costs should be analyzed along with the distribution or incidence of benefits. "Who gains?" and "Who pays?" was perhaps the most controversial topic considered by the group and workshop participants at large. Studies of the distribution of benefits and costs provide a quantitative complement to the enumeration of economic stakeholders. All this may be identified as a concern, but the equity issue is not, and should not, be a driving force in the reassessment project.

Some comments on the second charge were as follows:

> A simplistic approach of cost-benefit analysis for the Shore Protection Master Plan of 1981 would most likely not work today, but advances in methodology would probably help in the progression for today's Shore Management Plan.

> More money is gained from eroding areas. If hazardous aspects are separated from the economic aspects because of storms, the analysis of the value of the beach would be simple. (i.e., beach nourishment option: knowledge of the value of the beach is essential)

> The land acquisition part of the Shore Protection Master Plan was never really carried through and the majority of the funds has been utilized by the engineering solutions.

> The fundamental thing to look at is indicators; by selecting indicators, the outcomes are pre-selected.

> The State should look into how to tap into the vast amounts of money at the shoreline in order to convert it into the Shoreline Management Plan Fund; however, the Socioeconomics Group is focusing on identifying the spatial aspect rather than policy decisions of tapping into shoreline money.

One participant expressed the view that private beaches have lesser value than ones with lots of use, and so private beaches should not be eligible for shore protection funding. In rating beaches, the participant suggested that these kinds of values should be looked at. If beach nourishment is an option, however, how is it implemented? How is it bounded? There cannot be isolated enclaves. Some counties which stretch far inland also are concerned with and affected by coastal storm activity and economic development; however, the Shore Protection Master Plan does not focus on coastal counties with inland municipalities -- it focuses on coastal reaches.

With respect to the third charge, **Considerations for Public Involvement**, the group felt that options for public involvement should be carefully considered at the beginning stages of the reassessment effort. Specifically, the type of involvement desired must be identified. Some of these types of involvement may include, for example, clarifying goals for the reassessment, identifying options, and responding to drafts. Part of the strategic planning process requires consideration of the following: type of involvement; timing and use of input; and, definition of goals. Research needs should be outlined from the start. The opportunity to make mid-course corrections should be available, as well as an opportunity for a final evaluation. The Socioeconomic Group felt that relevant interest groups should be involved from the beginning of the reassessment effort, rather than just at the end, as reviewers. This would include a public review of White Paper topics -- perhaps during the initial one-on-one meetings -- to ensure that the topics were representative of public concerns. In addition, the group felt that public involvement should be maintained during the drafting of the plan ("mid-course") and for its final review.

The group also dealt with the idea of networking major issues. Major issues should be phrased in order to make them more democratic. Issues to be taken to interest groups should be framed, and important issues need to be addressed. Other issues along with scientific information are necessary.

The efforts in other coastal states and other countries may be helpful to the study, and networking with these states and countries may prove to be very productive. Once access to management plans from other states is obtained, the ideal would be to bring together documents with relevant content. The incorporation of these issues must be, and is, dynamic. Potential topics should be taken to meetings to get democratic participation right from the start.

As a final comment, participation should include mayors and anyone else interested in becoming involved. On a statewide level, public participation should be taken to mayors' meetings and township committee meetings The ladder of citizen participation is critically important. There also must be a direction as to what is being looked for and how it will be used. The execution of the project may be successfully accomplished with the combination of ensuring a clear definition of goals and organizing effective public participation.

The Barnegat Bay project can be used as a model of what needs to be defined initially and what public participation looks like. This project was based on developing a watershed management plan. Both public and private groups of citizens took the initiative and eventually formed a non-profit, public, and private organization called the Watershed Association, having some oversight assistance by the New Jersey Department of Environmental Protection. Barnegat Bay, with its unique resources, had to be looked at as a watershed, as well as in a more holistic view. The management plan required the identification of key resources and management measures, with the ultimate goal of a proficient management effort. Public participation within this project was noticeable, and the outcome was satisfactory because of this involvement.

The fourth charge dealt with **Considerations for Improving Public Access**. Linking funding to access was one consideration, prior to legislation, with timely access to state-acquired lands. The group felt that public funding of protection should be associated with an obligation to provide public access; this links public benefits to public costs. Prior state legislation for protection and beach nourishment expenditures sets a precedent for this linkage. If public acquisition of lands is to be considered a protection option, then new requirements should include considerations for timely access to these lands.

Policy Breakout Working Group (Dr. David Kinsey, Group Chairman)

As outlined by Dr. David Kinsey, there were nine key policy issues discussed in the Policy Group:

* beach-ocean access
* coastal hazard and resource protection area maps
* economics of protecting the shore
* public perceptions
* the use of flood insurance claims
* the adequacy of coastal flood insurance
* regulatory vs. non-regulatory approaches to shore protection
* cost-sharing approaches

As with the Socioeconomic Group discussion, the issue of "equity" emerged. The following questions surfaced in the discussion:

* Who subsidizes and why?
* Whose shore is it?
* Is the shore exclusive or inclusive?
* Does everyone feel welcome at the shore?
* What are the public's rights in Public Trust lands?
* What does social justice mean at the shore?

These questions have been noted for the sake of identifying that a concern in

this area does exist. Questions such as these may be handled by the project staff in terms of getting the right resources to answer them. The project staff is not in the position to resolve these concerns because, as indicated previously, it is not the main objective of the reassessment project.

A few issues need to be expanded. The issue of "beach-ocean access" needs to be discussed with access requirements defined. Accessible, readily-available, mapped information is needed on flood and erosion hazard areas, as well as on beaches, dunes, and other resource areas. Information should also be collected, integrated, and used for public information, planning, and regulatory purposes by State and local governments. The economics of protecting the shore raises the two following questions:

* 'Fight or flee?' and at what expense?
* How many beaches can we afford?

The view of policy issues, such as access and subsidies, has a varied interpretation when viewed by a diverse public. Public policy outcomes are affected even if these views differ from existing situations. Some people feel unwelcome in some communities at the shore because the of differing beach access policies from community to community.

The "adequacy of coastal flood insurance" raised the following questions:

* Should coverage be voluntary or mandatory?
* What percent of property owners participate in flood insurance programs and what total property value is insured?
* What is the extent of flood damage (covered) vs. wind-damage (not covered)?

The National Insurance Company has been estimating probable costs for future hazards. After Hurricane Andrew, insurance companies increased rates to insure against wind peril as well as hurricanes.

In many coastal areas, homeowners are unable to obtain insurance because insurance companies are afraid to insure them. These companies believe they will go out of business after the next big storm. A federal bill that would allow insurance companies to establish a "pool" of money in order to offset the costs at the next severe storm was up for consideration. With this "pool," the insurance company would be able to use the money if an event generated more than 20% of the claims. FEMA has opposed this bill as have many others because most people contributing to the "pool" would never benefit. Flood insurance is not required if homeowners do not have a mortgage on the home. New Jersey gives aid to those suffering from severe storm damage, including those who are not insured. Non-insured people who know that the damage done will be compensated for by the government are reluctant to get flood insurance. The Stafford Act has a Section that requires all homeowners to obtain flood insurance.

This Section eliminates the tendency homeowners have to allow the government to cover the costs of storm-induced damage.

Another possible solution to this problem is to restrict the number of homes rebuilt after a storm. There are, however, many limitations to this solution. What if the home is a historical site? What if it is not possible to relocate all of the people located in a hazard area? An example of this notion is the hundreds of thousands of people living in the Pasaic River Basin, whose homes get flooded frequently. Is the relocation of that many people a practical option, or should the basin be restructured? The "use of flood insurance claims" brings an opposing issue to the forefront: rebuilding vs. relocation and then rebuilding.

The "regulatory vs. non-regulatory approaches to shore protection" issues discussed were:

* Which short-term approaches are more effective ? Long-term approaches? Why?
* Would good building codes be an adequate approach to damage limitation? Insurance companies are now setting aside funds for hazard mitigation. They are using these funds to ensure that buildings are up to code.

There has been dissatisfaction with the New Jersey Department of Environmental Protection in terms of their coordination of dune regulations. Some people were concerned that there were too many departments handling information regarding the dunes, and that there needs to be one department handling all aspects of dune regulation in order to ensure proper dissemination. The New Jersey Department of Environmental Protection, however, has already delineated a department to regulate dune areas. There have been coordinated programs working on dune regulations within one department.

The Coastal Zone Management Act (Section 62.17) requires that enforceable shore protection activities become effective by July, 1995. This Section, also known as Coastal Non-Point Source Pollution, requires that all states must have enforceable management measures to control sources of nonpoint pollution by July, 1995. The entire State of New Jersey was identified as a coastal zone for the purpose of Section 62.17 because 98%+ of the bodies of water located in New Jersey drain into the Atlantic Ocean. Any enforceable measures will not be new and can be applied statewide. Recent amendments to this legislation redefined the coastal zone area for many other coastal states. Consequently, municipal governments must now redo their ordinances to comply with the Coastal Management Law. If the State of New Jersey does not have these activities implemented by 1995, it will lose 10% of its National Funding the first year; 20% the second year; and so on. The NJDEP has initiated policy reviews, but there is a question as to what will happen if a few towns stall the procedure. The State has noted that if 94 municipalities show measurable implementation, the Plan would be called "successful."

"Cost-sharing approaches" raised questions such as:

* Who pays for shore protection, and why?
* Why does the Federal Government pay for pumping sand on private beaches?
* Should all natural risks be cross-subsidized in an expanded pool of ratepayers?"

Shore protection policies in effect in other coastal states should be reviewed. Even though New Jersey's shoreline is somewhat unique, there are other states with similar shorelines. These other states have successful management programs. New Jersey is unique for its largely developed Barrier Island coastline. North Carolina, also has barrier islands along with land acquisition programs that seem to be working. Chatham and Cape Cod have been making progress in their pre- and post-storm activities.

Many agreed that input from the public will be the most useful resource. Other organizations that should be informed are:

* historical preservationists
* commercial fishermen
* captains of charter boats
* the National Park Service

Breakout Groups

Strategy (Room #203)	**Socioeconomics** (Almpi Seminar Room)	**Policy** (Room #214)
Dr. George Klein	Dr, Peter Parks	Dr. David Kinsey
Dr. Michael Bruno	Douglas Ofiara	Dorina Frizzera
Dr. Stewart Farrell	Dr. Eleanor Bochenek	Roman Horoszewski
Beth Sullivan	Barbara W. Steele	Blanche Krubner
Thomas Gagliano	B.J. Hance	Anne H. Phillips
Linda Brennen	Martin Bierbaum	D.W. Bennett
Vincent Domidion	Joseph Grossi	Ken Smith
Clark D. Gilman	Dr. Karl F. Nordstrom	Alex Wypyszinski
Steve Jandoli	Sally Dudley	Michael P. De Luca
Anthony Mangeri	Steven Whitney	Wendy Keppe
Peter Valesi	Jim Sinclair	
Dr. Susan Halsey	Thomas Fote	
Kim Sheehan	Susane Pata	

Wrap Up

This document is but the first step in the reassessment of the New Jersey Shoreline Master Plan. The assemblage of participants brought forth a wide range of issues regarding shoreline management and protection for consideration. The list, however, is not exhaustive and there will be other topics and issues that will surface as the project progresses. Yet, the concentrated effort of the participants was extremely fruitful in demonstrating the variety of values and concerns that will arise.

The several thrusts of the reassessment project were reviewed by the workshop participants and their evaluations will help drive the next steps in the project. A strong effort will be made to develop strategies for mitigation of risk and exposure that will qualify for FEMA support.

Public meetings at the county level were endorsed. The goal of the meetings is to provide general information on the existence of the project and its objectives. The public will be asked to identify their concerns regarding coastal management and protection. They will be asked to review the items developed by the workshop and to help identify and evaluate White Paper topics. The project will feed an educational program that will use the information and concerns to build teaching modules that can be incorporated within our existing educational curricula. The project will thus have immediate value in assisting shoreline management and protection, and it will have the longer range benefit of raising the level of knowledge of our youth on issues of shoreline management and protection.

Information regarding the project has been provided via mail, telephone and fax, thus far. This kind of networking system seems to be an effective method as there has been a great response to questionnaires distributed.

Presently, an Advisory Committee is being assembled. The creation of an Advisory Committee is necessary to assist in the development and review of products, and in the dissemination of information. Key members of the Committee need to be identified and appointed. An organizational structure will be defined and each group will have particular responsibilities and targets. Networking of several levels of participation should be created and used.

Within the next few months, specific work tasks will be established and efforts will begin to get input on these tasks as well as the data that will be needed to accomplish the task. The development of White Paper topics will be completed and distributed for review. More input in terms of reactions to these White Papers will be received and the necessary changes will be made to ensure the information is correct. Once information regarding options has been circulated and condensed, a consensus document will be created.

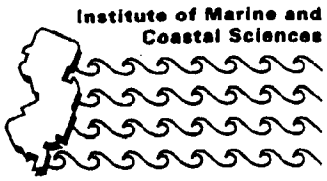
Future information dissemination rests on the White Papers to be drafted. Enough information will be accumulated and circulated in order to make the consensus document valid by covering all aspects and providing enough information about each of the options.

Appendix B

1. One-Pager Project Description

2. Question and Answer Document

3. "Top Ten" List of Project Characteristics



New Jersey's Shoreline Future

The Institute of Marine and Coastal Sciences at Rutgers University has been awarded a state grant to assess the present NJ Shore Protection Master Plan and to prepare recommendations for its revision. One objective of this present study is to provide local resource managers and decision makers with a broad range of alternatives for shoreline management. Another project objective is to develop scenarios for post-storm recovery and redevelopment associated with mitigation measures. Information generated from this study will be used to update the Shore Protection Master Plan, establish a post-storm plan, and to recommend procedures for selecting suitable approaches to shore management. The study will include a review of current shore protection practices and an evaluation of strategies used by other coastal states.

One important project task is to involve interested citizens by providing opportunities for their participation and input in evaluating existing and potential shore management strategies. This task supplies a means for yet another project objective which is to update information sources and incorporate new information that was not included in the 1981 Shore Protection Master Plan. These two components are critical to the development of strategies that reflect local and regional concerns regarding shore management. With the help of local input, the results of this effort will help resource managers make informed decisions on a range of shore protection strategies. A series of public meetings, workshops, forums and presentations have been and will continue to be held to solicit local and regional input on this topic and to provide information exchange on current and potential shore management techniques.

Some products that have been created to date include: a July 12, 1994 Workshop Summary; and draft documents on White Paper topics such as engineering structures, coastal dune management, shore area economics and sea level rise. Final copies of these documents will be widely distributed and may be available upon request.

In addition, a Citizens Advisory Committee has been established in each coastal county to help identify the variety of local concerns associated with this initiative. We invite and welcome anyone interested in participating in this Committee. Each county sub-committee reports through Sally Dudley (Executive Director, Association of New Jersey Environmental Commissions and a member of the Steering Committee for the project.)

The project is a cooperative effort among research and educational institutions throughout New Jersey which investigate coastal management issues. These include the Institute of Marine and Coastal Sciences at Rutgers, Stevens Institute of Technology, Richard Stockton College, the NJ Department of Environmental Protection, and the New Jersey Marine Sciences Consortium.

For more information on the project and to get on our mailing list and/or Citizens Advisory Committee, please contact Susane Pata at (908) 932-6555, extension 504. We also welcome the opportunity to speak with your group on New Jersey's Shoreline Future.

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A Study of New Jersey's Shoreline Future

Common Questions Asked

What is the goal of this project?

To provide local resource managers and decisionmakers with information to help select the most appropriate strategies to protect beaches and dunes from severe storms and erosion, and to mitigate these shoreline hazards.

Who is conducting this project?

The project is a cooperative effort among research and educational institutions throughout New Jersey which investigate coastal management issues. These include the Institute of Marine and Coastal Sciences at Rutgers University, Stevens Institute of Technology, Richard Stockton College, the N.J. Department of Environmental Protection, and the N.J. Marine Sciences Consortium.

What is the role of Rutgers, DEP and other institutions in this project?

Rutgers is responsible for coordinating the overall effort including the development of scenarios for local officials to select strategies for shore protection, soliciting public input into this project, drafting an update to the Shore Protection Master Plan, and submitting a report with recommendations for future action to the state. DEP officials who oversee coastal management issues will provide information on current state efforts to manage our shoreline. Our academic partners will help assemble and evaluate information on shore protection.

What is the role of the general public in this project?

Armed with the latest information regarding shore protection in New Jersey, citizens will be asked to identify which shore protection issues are most important to them and should be addressed in future planning efforts.

How will the public benefit from this project?

An increased awareness of shore protection issues will enable us to reduce our vulnerability to coastal storms and erosion.

What is meant by New Jersey's "shoreline"?

Shoreline means those areas which possess beaches and dunes from Sandy Hook in Monmouth County to Lower Township in Cape May County. Other "shoreline" communities in Raritan and Delaware Bays are not included in the scope of this study.

What is meant by shore protection?

Shore protection is defined as a range of strategies which are used to maintain our beaches and dunes against natural processes such as storms, erosion and sea level rise. These may be referred to as "hard" or "soft" strategies. Hard strategies include structural or engineered approaches to shore protection such as groins, jetties or seawalls. Examples of soft strategies include beach nourishment and dune management.

What hazards do we face which require efforts to manage our shoreline? How are these hazards presently managed by the state? Can these hazards be reduced?

Shoreline erosion is a natural process that is sometimes accelerated by human activities. Eventually, long-term sediment losses impact coastal development. Structures and beach nourishment slow these losses, at a cost and for a limited time. Hazardous areas where erosion rates are high are candidates for alternatives to structures and beach nourishment.

How does this project relate to the existing Shore Protection Master Plan? Why do we need to update this plan? Is is not working?

The Shore Protection Master Plan was adopted in 1981 and outlines state priorities for the renourishment of our shoreline and repairs to shore protection structures. This project aims to update this plan by constructing scenarios for shore communities to use in selecting a range of options for shore protection, identifying mitigation measures which communities may use to qualify for state funding, and development of a post-storm plan.

Will this project affect shore property owners, visitors to the shore and New Jersey citizens in general?

Yes. Our goal is to increase awareness of shore protection strategies among each of these groups so that we can apply the best approaches to protect our beaches and dunes.

Will my taxes be raised to support shore protection efforts as a result of this project?

No. New Jersey already places money into an annual fund to provide state matching funds for federal beach restoration projects. This study will identify how shore communities may qualify for state funds to mitigate coastal hazards.

Will results of this project affect development along the New Jersey shore?

Development along the shore will continue to be governed by the Coastal Area Facilities Review Act and local statutes. Results of this effort should help local officials make more informed decisions regarding development in their communities.

How do the recent changes in the CAFRA law relate to this project?

CAFRA governs development activities in New Jersey's coastal zone including beaches and dunes. This law will not be modified as a result of this project.

How does this project relate to other planning efforts such as the State Development and Redevelopment (Master) Plan?

The State Master Plan provides a blueprint for New Jersey communities to use in guiding development and redevelopment outside the coastal zone. The CAFRA legislation governs development activities in the coastal zone and may be integrated into the State Master Plan. Our effort to study New Jersey's Shoreline Future deals with shore protection issues.

Will this project affect current efforts to restore beaches through beach nourishment?

No. Present efforts to replenish eroded beaches will continue as planned.

Will this project lead to any changes in public access to beaches?

No. Public access will continue to be governed by local officials.

How do other coastal states manage coastal hazards including storm events and erosion?

Several other coastal states, most notably North Carolina and Florida, possess areas of developed beaches similar to those found in New Jersey. One component of this study will be to evaluate how these and other states protect their shorelines, and which approaches, if any, may be suitable for application in New Jersey.

How may I receive additional information on this project? How can I get involved in this effort?

For more information, contact Susane Pata at the phone number or address below:

Institute of Marine and Coastal Sciences
Rutgers - The State University of New Jersey
P.O. Box 231, Cook Campus
New Brunswick, New Jersey 08903-0231

908-932-6555, ext. 501

Also, Citizen Advisory Groups have been formed in each of Monmouth, Ocean, Atlantic and Cape May Counties to provide an opportunity for the public to participate in New Jersey's Shoreline Future.

A Study of

New Jersey's Shoreline Future:

What it Is, and What it Isn't

It is:

- an evaluation of current and potential shore protection methods,
- an effort to help local resource managers and decisionmakers manage the effects of severe storms and erosion along our shoreline,
- an effort to mitigate future hazards along our shoreline including all coastal communities with beaches and dunes from Sandy Hook in Monmouth County to Lower Township in Cape May County,
- a process which will be used to update the Shore Protection Master Plan including development of a post-storm plan, and
- an opportunity for the public to express their concerns on shore management and to ensure that these concerns are considered during this study.

It is not:

- an investigation of water quality or non-point source pollution,
- an effort which addresses coastal erosion in Raritan or Delaware Bays,
- an effort to implement recent regulatory changes to the Coastal Area Facilities Review Act,
- a process to regulate shore protection in coastal communities, and
- an effort to raise taxes in support of shore protection.

Appendix C

1. Charges for Citizens Advisory Committees

2. List of Specific Tasks for Citizens Advisory Committees

Charge to Citizen Advisory Committees

October 25, 1994

Little Egg Harbor Township

The project to investigate **New Jersey's Shoreline Future** is designed to assess a broad range of strategies to mitigate shoreline erosion and issues related to shoreline management. Public input is essential to identify the variety of concerns associated with this initiative. Thus, **Citizen Advisory Committees** will be formed to solicit this information and provide a mechanism for public participation. These committees will be organized by coastal county and report through Sally Dudley (Executive Director, Association of New Jersey Environmental Commissions and a member of the Steering Committee for the project).

Charge

Following the general presentation and discussion today, members of the Citizen Advisory Committees will break out into four groups organized by the county in which they reside. Each county group will elect a chairperson and begin to address the tasks listed below.

1. Identify local concerns (by community) related to shore protection and shoreline management. Concerns shared by many communities will be addressed by "white papers" prepared by the project staff.

2. Prepare a history of shore protection for each community. This should include any information on the date and extent of beach nourishment projects, engineered structures, etc.

3. Collect copies of all local ordinances which relate to shore protection. Preliminary efforts should focus on those documents which address dune management.

4. Become knowledgeable about the project and prepare to disseminate information on shore protection and shoreline management to local municipalities. Dissemination can be in the form of seminars, distribution of handouts, exhibits, school projects, etc.

5. Establish a timetable for meetings and completion of the tasks listed above. A suggested timetable is provided below.

Timetable

Phase I - 4-6 weeks (by @ mid-December 1994)

A. Identification of local concerns (by community) related to shore protection.

B. History and description of shore protection for each coastal community.

C. Collect copies of local ordinances which relate to shore protection.

Phase II 6 weeks through end of project (September 1995)

A. Become knowledgeable about **New Jersey's Shoreline Future.**

B. Disseminate information on shore protection strategies and shoreline management issues (organize seminars, exhibits, educational projects, etc.).

Citizens Advisory Committee Tasks
Spring 1995

- **Gathering economic data on beach use**

The economist who is working with us on the project has requested this kind of data as aid for his study. Volunteers are requested to gather information, especially on communities with beach tags. Information from past years on the number of tags and revenue would be of use as well as other community measures of beach utilization, beach value, and economic benefits/costs. As of now, we do not have any economic data on any of the beaches.

- **Sponsoring a political/public panel discussion**

Organization for this activity is in the beginning stages, but it is open to comments and suggestions. With the help from Citizens Advisory Committee members, the Working Staff would like to organize a panel discussion regarding shoreline management issues involving representatives from local government and local interest groups. Citizens Advisory Committee members will be requested to help sponsor the panel discussion in the upcoming months.

- **Recruiting representatives from coastal communities**

A recently created list of all coastal communities in New Jersey indicates which communities have and do not have representation. The communities lacking representation need additional effort. (Asbury Park, Ocean Grove and Brick do not have adequate representation.) Hanging flyers in frequently populated areas of these underrepresented communities may be one way of networking; another networking method may be simply passing one along to an interested citizen. (Some flyers are included with this mailing to hang within the respective community.)

- **Preparation of a local history of shoreline protection**

The local history should include information such as: the kinds of structures used in the past within the specific area; the cost of those structures; a history of storm damage within that area; etc. Such data may be obtained from town halls, municipal offices, etc. After obtaining the appropriate historical shoreline data, citizens are requested to work collectively on building a historical timeline for their specific shoreline reach (this is one reason why representation from each coastal community is necessary), including a most recent update on that specific reach's activities. Attending your county's Citizens Advisory Committee meeting would enable the collective effort in producing the timeline.

- **Collection of community ordinances**

A list of all coastal communities in New Jersey lists the coastal communities from which we still need coastal ordinances. We would like to obtain all shorefront community ordinances for a comprehensive evaluation. The types of ordinances requested may deal with coastal development, coastal protection, dune maintenance, etc. Ordinances may be obtained from town halls, municipal offices, etc. (We do not have any coastal ordinances for Asbury Park, Ocean Grove or Brick.)

- **Identification of local concerns**

We are still interested in hearing about local concerns among citizens since they may lead to the development of new White Papers. It is important that we receive such feedback so that it can be considered for further development. Answering and sending back the questionnaire sent with this mailing may aid us in this effort.

- **Getting the *NJ's Shoreline Future Project* on other meeting agendas**

Informing citizens with environmental interests at such meetings may enable a more widespread method of networking about the project. Literature from the Institute of Marine & Coastal Sciences may be provided for distribution at these meetings. (Such meetings include groups such as: Sierra Club, Clean Ocean Action, Alliance for a Living Ocean, Surfrider Foundation, etc. (NOTE: Some of these organizations may know about the project already, but they may need to be updated.))

- **Borrowing shoreline slides for presentations at other meetings**

A collection of shoreline slides will be made available through the Institute of Marine & Coastal Sciences to give Citizens Advisory Committee members the opportunity to make their own presentations at other meetings. Once a meeting date has been identified and the *NJ's Shoreline Future Project* is on this meeting's agenda, we may loan the shoreline slides for the presentation.

Appendix D

1. Questionnaire

2. Networking Flyer for Project

A Questionnaire for New Jersey's Shoreline Future

1) As a citizen with coastal concerns, what kind of coastal processes data do you think should be analyzed and evaluated?

__ Sand transport
__ Evaluation of effects of various frequency storms
__ The effects of groins and jetties on specific beaches, namely, (beach name)_____
__ Other:_____

2) On the regional level (State), what options do you believe to be most important for shoreline management?_____

3) On the local level (county, community), what options do you believe to be most important for shoreline management?

__ Mitigation plans such as the enhancement of dune systems
__ Beach nourishment
__ No action
__ Other:_____

4) On an "individual" level (private property owners), what options do you believe to be most important for shoreline management?

__ Enhancement of dune systems
__ Elevating structures
__ Federal flood insurance
__ Other:_____

5) Which of the two do you support as the primary option for shore management?

__ Protection from hazard Why?_____
__ Removal from hazard Why?_____

6) If protection from hazard was the chosen method of management for a particular site, what would be some favorable options?

__ Beach nourishment
__ Installation of pilings on homes
__ Other:_____

7) If moving away from hazard was the chosen method of management for a particular site, what would be some favorable options?

__ Moving structures back away from scarped zone lines
__ Other:_____

8) What do you value most highly at the shore on an "individual" level? (i.e.: Visual quality, boardwalks, etc.) Please state other:_____

9) Please recommend White Paper or Fact Sheet topics that would be of value to the shore management process:_____

NAME:_____ AFFILIATION:_____ TITLE:_____

ADDRESS:_____ CITY:_____ STATE:_____ ZIP:_____

COUNTY:_____ ☼#_____ ☾#_____

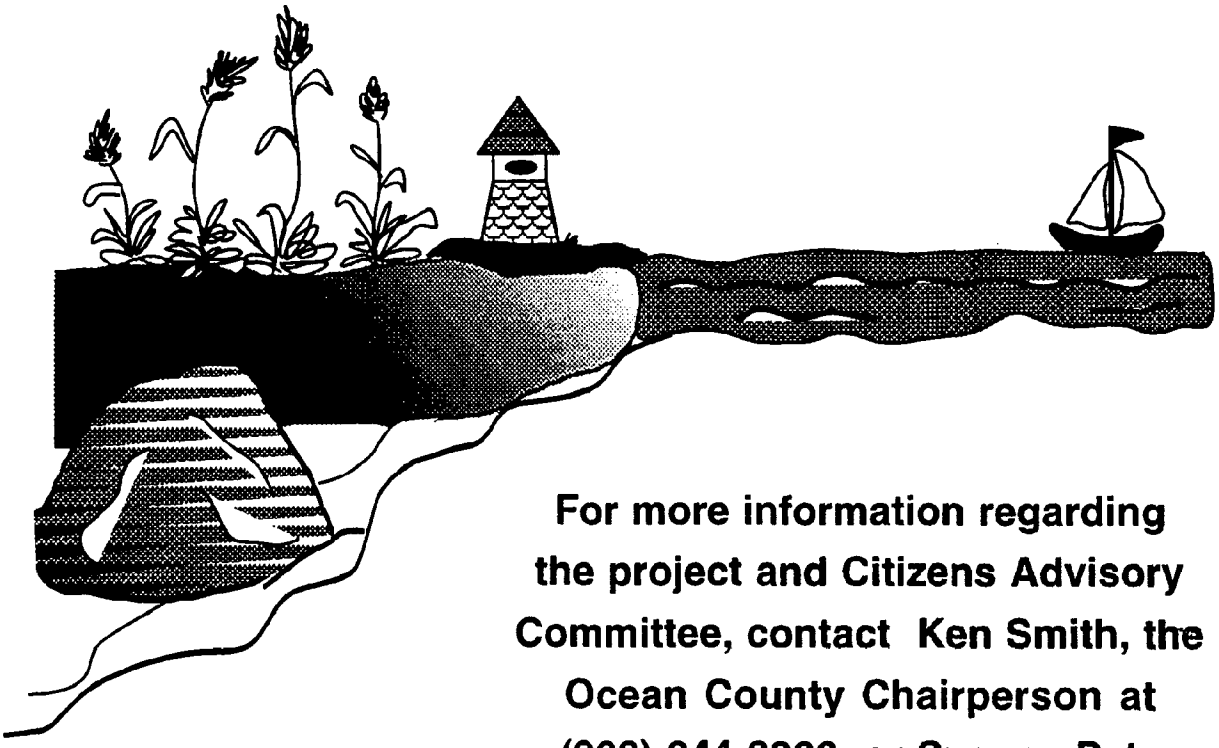
WOULD YOU LIKE TO BE ON OUR CITIZENS ADVISORY COMMITTEE? Yes____ No____

This questionnaire was distributed by: _____, at:_____
(i.e. meeting, gathering, etc.)

Please return to: IMCS-Rutgers University, P.O. Box 231, New Brunswick, NJ 08903, ATT: Susane Pata

SURF CITY NEEDS YOU!

The Citizens Advisory Committee aids in the reassessment of the NJ Shore Protection Master Plan and needs public participation from Surf City Borough.



For more information regarding the project and Citizens Advisory Committee, contact Ken Smith, the Ocean County Chairperson at (908) 244-3366, or Susane Pata (IMCS, Rutgers University) at (908) 932-6555, X 504.

NJ's Shoreline Future: Preparing for Tomorrow

Appendix E

1. Two-Page Progress Report

2. Updated Two-Page Progress Report

Institute of Marine and
Coastal Sciences

New Jersey's Shoreline Future
Progress Report

The New Jersey's Shoreline Future project calls for a great deal of public input and participation by both interested citizens and local officials. Since the commencement of the project, the following has taken place in terms of communicating information: the Governor's Coastal Alliance Meeting; a meeting with NJDEP; a Workshop to discuss various issues with key experts; a series of county public town meetings; and town meetings by organizations, such as FEMA, that we have piggy-backed with. There were other meetings that we were invited to attend to inform participants of the project and the project's progress. Some of these included: a presentation of the Technical Committee of the JSP regarding the project and avenues of involvement for the JSP; a Long Beach Island Men's Gardening Club meeting to discuss the project; a presentation on the reassessment project to the Atlantic County Planning Board at its monthly meeting; a series of American Littoral Society meetings; a New Jersey League of Municipalities Conference; and an Environmental Roundtable meeting organized by the Monmouth County Planning Board. Meetings with mayors have occurred so that they may identify their areas of concerns and evaluations of certain shore area reaches have been made in conjunction with these meetings. There have been Federal and State Legislative Briefings attended where information of the project has been emphasized. Many County Citizens Advisory Committee meetings have occurred where members have been instructed to identify their areas of concern as well as to gather coastal data, such as ordinances and historical information on particular shore area reaches.

Information and contacts with institutions have been made as well. Numerous agency offices in New Jersey, New York and Washington were contacted and materials were obtained that pertain to the coastal zone of New Jersey. The purpose is to use these materials to highlight those topics that are of interest and that bear upon the Shore Protection Master Plan reassessment process. A cataloguing system was developed to store and retrieve all of the papers and reports that are being assembled.

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A recent meeting with Advisory Committee called all Steering Committee members together to make factual presentations and discuss White Paper topics, as well as to critique the drafts of White Papers already created. Many Citizens Advisory Committee members attended and voiced their concerns. County Chairpersons for the Citizens Advisory Committees were also in attendance and related the progress their committees have made within the few months of their existence. The Working Committee is now moving toward establishing a methodology for flow of information from communities. Areas needing assistance in the information gathering process have been identified and the Working Committee will work closely with all committees within the Advisory Committee to ensure the objectives of the project are carried out.

Meetings with other community mayors will be scheduled; White Paper drafts will be updated and the Citizens Advisory Committees will be meeting to discuss their next steps. We will also continue gathering information from organizations such as USACE, NJDEP, and, institutions such as Stevens Institute of Technology, Richard Stockton State College and the Institute of Marine and Coastal Sciences.

New Jersey's Shoreline Future . . . Preparing for Tomorrow
Executive Summary

The Institute of Marine and Coastal Sciences (IMCS) at Rutgers University has been awarded a state grant to assess the 1981 New Jersey Shore Protection Master Plan and to prepare recommendations for its revision. One objective is to update information sources and to research, evaluate, and incorporate new information that was not included in the 1981 plan. A second objective is to discuss a broader range of alternatives to the more traditional approaches to shoreline management such as revetments, seawalls, and bulkheads. The project incorporates the development of scenarios for post storm recovery and redevelopment associated with mitigation measures. In addition, this study will include a review of current shore protection practices and an evaluation of strategies used by other coastal states.

This project is a cooperative effort among research and educational institutions throughout New Jersey which investigate coastal management issues including the Institute of Marine and Coastal Sciences at Rutgers, Stevens Institute of Technology, Richard Stockton College of NJ, the NJ Department of Environmental Protection, and the NJ Marine Sciences Consortium . Rutgers University has taken the lead role in conducting the reassessment, augmented by an advisory group composed of experts in coastal science, technology, and coastal policy. Many of the Advisory Group members are from several agencies and jurisdictional levels responsible for governing resources management and policy in New Jersey's coastal zone. A Project Team or Working Committee, led by Dr. Norbert Psuty and composed of IMCS staff, was formed to address the above objectives and goals of the project. A Steering Committee or Advisory Board was created to lend assistance to the Working Committee. It is composed of three sub-committees, each with a particular area of focus; Science and Technical, Local Policy and Citizen Advisory Sub-Committees.

A strong component of this effort involves public participation and input to evaluate existing and potential shore management strategies. Citizen input is critical to the development of strategies that reflect local and regional concerns regarding shore management. Organization of the meetings and procedures for conducting a public participation process were reviewed by the Rutgers Center for Environmental Communication. Citizen Advisory Groups from all four coastal counties including Cape May, Atlantic, Ocean, and Monmouth counties were formed. Cape May and Atlantic counties have united to form one representative group. These committees were organized to report to the Citizens Sub-Committee Chairperson, Sally Dudley (Executive Director of ANJEC). The local county citizen groups address the following tasks: (1) identification of local concerns related to shore protection and shoreline management; (2) preparation of a history of shore protection for each community; (3) collection of copies of all local ordinances which relate to shore protection and especially dune management; and (4) preparation of information for dissemination on shore protection and management to local municipalities. Each group has conducted and will continue to conduct local meetings to address the tasks and objectives. Overall, this public participation process is designed to heighten public awareness of shore protection and management issues.

The IMCS Working Committee has conducted various public meetings in addition to the Citizen Advisory meetings. IMCS hosted a collaborative meeting with the Federal Emergency Management Agency (FEMA) to discuss ways in which to incorporate national mitigation strategies (i.e., concomitant reduction in natural hazard insurance loses through mitigation efforts) into the Shoreline Management Plan. Michael De Luca, Chairperson of the Local Policy Sub- Committee, conducted a State Legislative Briefing on the project. Members of the working committee also have participated in beach walks with local government officials to evaluate, photograph, and record regional area concerns and needs. Future meetings with county agencies, state-wide forums, environmental associations, and various citizen groups are planned in efforts to continue interaction and solicit information and cooperation. The results of this effort will ultimately help resource managers make informed decisions on a range of shore protection strategies.

As part of the reassessment effort, IMCS has developed a series of white papers on important research topics related to the Shore Protection Master Plan. A great deal of effort has been put into establishing the issues and defining the White Paper topics to treat aspects of the issues. White Paper topics include; coastal processes, beach engineering approaches, beach development and its effects, assessment of socioeconomic impacts, current status of public education on the issues, the effects on the biota, and short and long-term strategies for protection from hazard. Currently, a number of white papers exist in draft form including ; *An Overview of Shore Protection Approaches and Strategies Utilized in New Jersey* and additional papers on *Sea Level Rise* and *Coastal Dunes.*

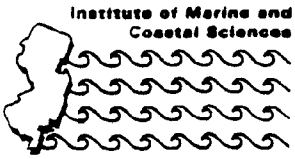
Lastly, the Master Plan Reassessment also includes a public outreach and education component. Plans include the design and implementation of supplementary science materials or education modules for use in the precollegiate classroom. Materials will focus on the coastal geomorphology of the New Jersey coastline and address the ethics associated with new choices and responsibilities on shoreline management options and strategies. Teacher training and enrichment workshops will be offered through IMCS's existing precollegiate program called Project Tomorrow. Teacher training efforts are underway in Ocean County through an Ocean County Mall Project called the Ocean Program.

The current study of New Jersey's shoreline future provides an opportunity for the public to express their concerns on shore management and ensures that these concerns are considered during the project. With the recent decision to withdraw the Army Corp of Engineers from sand replenishment efforts, the development of scenarios for post -storm recovery and redevelopment are increasingly relevant to coastal decision makers. For more information on New Jersey's Shoreline Future, please contact Susane Pata at (908) 932-6555 extension 504.

Appendix F

1. Home Page Flyer

2. Home Page



New Jersey's Shoreline Future
Preparing for Tomorrow

Something New:

New Jersey's Shoreline Future is now on the Internet!

What is the Internet?

The Internet is the world's largest computer network that evolved from a Federal research program. It is a large community of people all over the world using computers to interact with one another. It is a way to get information on a wide range of topics including government, academic research, and corporations. Finally, the internet is a way to keep in touch with friends, associates, and organizations. It is with this intention that we have constructed the homepage for ***New Jersey's Shoreline Future***, so that we can share with the public the information we have, and to receive your comments, concerns, and questions. Please check us out at the following address:

- **http://marine.rutgers.edu/pt/shoreline.html**

Contacting the Project Staff:

We want you to be able to contact us with your concerns or requests for:

- Information
- Project updates
- Phone numbers & addresses

The following ways are available for you to contact us:

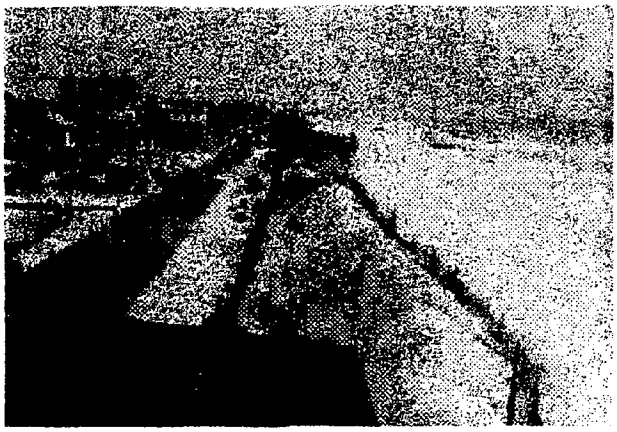
- **PHONE:** Call us at **(908) 932-6555 ext 504** or **518.**
- **FAX:** Send us a fax **(908) 932-1820.**
- **WRITE:** Send correspondence to:

  NJ's Shoreline Future
  Rutgers University
  Cook Campus
  P.O. Box 231
  New Brunswick, NJ 08903-0231

- **E-MAIL:** Send your E-mail messages to: **grace@imcs.rutgers.edu**

Whichever way you choose to contact us, we will respond.

NEW JERSEY'S SHORELINE FUTURE



The Institute of Marine and Coastal Sciences at Rutgers University has been awarded a grant by the State of New Jersey to reassess the **NJ Shore Protection Master Plan of 1981** and to prepare recommendations for its revision. One objective of this present study is to provide local resource managers and decision makers with a broader range of alternatives for shoreline management. Another Project objective is to develop case scenarios for post-storm recovery and redevelopment associated with mitigation measures. Information generated from this study will be used to update the Shore Protection Master Plan, establish a post-storm plan, and to recommend procedures for selecting suitable approaches to shore management. The study, referred to as the **Coastal Hazard Management Plan**, will include a review of current shore protection practices and an evaluation of strategies used by other coastal states.

One important Project task has been to involve interested citizens by providing opportunities for their participation and input in evaluating existing and potential shore management strategies. This task supplies a means for yet another objective which is to update information sources and incorporate new information that was not included in the 1981 Shore Protection Master Plan. These two components are critical to the development of strategies that reflect local and regional concerns regarding shore management. With the help of local input, the results of this effort will help resource managers make informed decisions on a range of shore protection strategies. A series of public meetings, workshops, forums, and presentations have been and will continue to be held to solicit local and regional input on this topic and to provide information exchange on current and potential shore management techniques.

Dr. Norbert Psuty, Mayor Sencindiver, and Daniel Collins in Beach Haven, NJ.

Some products that have been created to date include: a July 12, 1994 Workshop Summary; a report on the General Advisory Meeting of January 18, 1995, and White Paper draft documents: ***"Engineered Approaches," "Sea Level Rise,"*** and ***"Dune Maintenance."*** Final copies of these documents will be widely distributed and may be available upon request. Some new White Paper topics which will soon be drafted include: an assessment of coastal value, education and outreach, and storm recurrence intervals.

The Project has recently undertaken a new task dealing with **Coastal Blue Acres**, a 1995 bond act that will provide $15 million in funding for NJ counties and municipalities to purchase, from willing sellers, undeveloped and flood-prone coastal properties. The Working Committee will assist the New Jersey Department of Environmental Protection (**NJDEP**) in both defining the criteria for acquiring coastal property and identifying storm damage or floodprone areas for inclusion in the program.

Other tasks in progress include the **storm impact case scenarios** and a Project bibliography. The case scenario study is part of the Project's mitigation objective. It will entail constructing scenarios for shore communities to use in selecting a range of options for shore protection, identifying mitigation measures which communities may use to qualify for State funding, and the development of a post-storm plan. For more information on **mitigation** follow this link to **FEMA**. A comprehensive bibliography is presently being compiled as one of the Project's by-products. Upon completion, the bibliography will encompass a wide range of topics including those relating to the project and the project's White Papers. Plans are being formulated regarding the most effective means to make this information available.

In addition, a Citizens Advisory Committee has been established in each coastal county to help identify the variety of local concerns associated with this initiative. Each county sub-committee reports through Sally Dudley, Executive Director of the Association of New Jersey Environmental Commissions, and member of the Advisory Committee for the project. The past year and a half was replete with meetings of the Citizens Advisory Committees. The "final round" of meetings were wrapped up in February of this year and we thank all who participated. We also continue to welcome your comments and suggestions regarding the Project so please feel free to contact our Project staff.

Education is a vital component of the Project and the Institute is involved in an ongoing effort known as the **NJ Shoreline Future's Writers Workshop.** The goal of this workshop is to stimulate an awareness and knowledge of information collected in the 1981 Shore Master Plan reassessment effort. The objective is to develop a series of

hands-on activities for the K-8 classroom that will focus on the new information collected for the Coastal Hazard Management Plan. The following is a list of items included in the Plan, that we feel could be transferred to the classroom:

Coastal geomorphology: basic processes; impact of erosion/accretion cycle; geomorphological characteristics of the NJ shore
Dunes: factors influencing formation; means of building and maintaining dunes; restoring dunes; and town management plans
Beach structure and engineering approaches to stabilization: hard and soft shoreline protection strategies
Planning and financing beach management strategies: issues such as public access, recreation, fishing, etc.
Beach development: the effect of development and construction on beach dynamics
Global influences on the NJ Shore: sea-level rise, storm frequencies
Legislation effecting how we manage the NJ shoreline: Blue Acres, Coastal Hazard Management Plan, National Mitigation Strategy, National Flood Insurance, etc.

The overall objective of the workshop is to create public awareness, knowledge, and understanding of coastal hazards which focus on improving public safety and reducing storm related losses. If anyone would like additional information on the workshop and some suggestions/recommendations for supplementary lesson plans, please contact our education specialist, Janice at: mcdonnel@ahab.rutgers.edu

The Project is a cooperative effort among research and educational institutions throughout New Jersey which investigate coastal management issues. These include the **Institute of Marine and Coastal Sciences** at Rutgers University, **Stevens Institute of Technology, Richard Stockton College,** the **NJ Department of Environmental Protection**, and the **New Jersey Marine Sciences Consortium**.

We welcome anyone who would like to contribute to the Project **bibliography**. If you have or are familiar with a reference(s) that is relevant to the Project, please feel free to share it with the Project staff. The goal of the bibliography is to provide **everyone** with a comprehensive set of references concerning shoreline issues. To share your references with us, contact Erica at: spence@imcs.rutgers.edu.

For more information on the project or to get on our mailing list,
contact Susane at: spata@ahab.rutgers.edu

New Jersey's Shoreline Future: Preparing for Tomorrow
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Last updated: May 9, 1996

Appendix G

1. Summary Report of Public Meetings and Interactions

2. January 18, 1995 General Meeting Summary Report

CHRONOLOGY FOR THE *NEW JERSEY'S SHORELINE FUTURE* PROJECT

MAY 1994

5/31/94
Coastal Alliance 1994: Organized by the NJDEP and held at Ocean City Music Pier, this meeting was attended by approximately 150 people. The Project Staff introduced themselves and identified the Project to appropriate individuals and agencies at local, State, and National levels. Some topics of concern that were discussed included the following: CAFRA, shore protection, and tourism. Literature generated by the Project Staff as a result of this meeting consisted of a meeting summary, background information on CAFRA and an overview on shore protection. Miscellaneous documents were obtained through this meeting: CAFRA regulations, tourism brochures and the 1992-1993 Biennial Report to Congress on Coastal Zone Management (Volume 2).

JUNE 1994

6/15/94
NJDEP Meeting: Project Staff members attended the NJDEP meeting held in Trenton to identify the following: Project management and roles, Steering Committee members, Working Committee members, the Rutgers Cooperative Extension, and the July 12, 1994 Workshop for the Reassessment Project. The meeting summary created included a definition of Shore Master Plan components and the objectives for establishing a Steering Committee. A network of contacts was obtained through this meeting.

6/17/94
American Littoral Society Meeting: Dr. Norbert P. Psuty met with the American Littoral Society for a discussion on shore management and shore protection.

JULY 1994

7/12/94
Project Workshop: The Workshop Meeting was held at Rutgers University's Institute of Marine and Coastal Sciences in New Brunswick, where approximately 40 people were in attendance. The Workshop was a "brainstorm" event where key experts and interested persons could convene to discuss the various issues related to coastal management and protection. Participants were encouraged to provide insight and direction which would serve to uncover new data and information sources. A plenary session opened the gathering with an announcement of the goals and objectives of the Project to reassess the Shore Protection Master Plan. Major issues were introduced and the group was split into three working groups to consider specific issues in greater depth. The groups came together in a plenary session later in the day and shared their discussions and resolutions. Topics that were covered during the meeting included the folloing: Shore Protection Strategies; Legal and Policy Issues; Socioeconomic Issues; and, White Paper Topics. The literature generated for this gathering and distributed during the Workshop included the following: the purpose of the Reassessment Project, the importance of this effort, and an invitation for all interested citizens to participate. A Workshop Summary Report was produced as a result of the Workshop and distributed to all Workshop attendees and interested citizens. A list of White Paper topics and outreach groups was assembled as well.

Public County Meetings:
7/25/94 Ocean County Public Meeting
(Held at Rutgers Cooperative Extension Building in Toms River)
7/26/94 Atlantic County Public Meeting
(Held at Rutgers Cooperative Extension in Mays Landing)
7/27/94 Monmouth County Public Meeting
(Held at Rutgers Cooperative Extension in Freehold)
7/28/94 Cape May County Public Meeting
(Held at Rutgers Cooperative Extension in Cape May Court House)

A series of public meetings were held in late July 1994. One gathering was held in each of the four coastal counties of New Jersey: Ocean, Atlantic, Monmouth, and Cape May. The goal of these meetings was to introduce the project and to identify opportunities for public input and participation. The meetings were publicized through many different avenues. Attendance at the public meetings was less than anticipated on the basis of the telephone responses. The average number of citizens at each site was 32. Despite the modest numbers, the process was successfully initiated and information began to flow concerning the Project and the goals toward reassessment of the Shoreline Master Plan. Topics which surfaced during discussion included: the Steering Committee; citizen involvement through public participation and awareness; education modules; scenario development; National Flood Insurance; cost-benefit analysis of hazard mitigation strategies; a holistic approach to regional management; sources of funding for protection strategies; and, quantifying the value of a beach. A Citizens Advisory Committee from each coastal county was formed as a result of these meetings. Various sources of information were obtained: the Kerry Legislation, referrals to existing shore protection methods, and mention of new innovative technology being used in Avalon. A Meeting Summary Report was compiled highlighting the main issues of the county meetings.

AUGUST 1994

8/4/94
Environmental Risk Communication Workshop: Organization of the meetings and procedures for conducting public meetings were reviewed by associates of the Rutgers Center for Environmental Communication. Their input was extremely helpful in avoiding misunderstanding and for maintaining productive meetings. Project handouts were prepared for and distributed at this meeting. Attendees were given a short presentation of the Reassessment Project, its timetable, and the opportunities for input. Input began in the second part of the public meeting. Many useful suggestions were contributed. In some cases, individuals gave voice to their personal causes or vented their frustrations with some aspect of local or state government.

SEPTEMBER 1994

9/8/94
FEMA Town Meeting: As part of a collaborative effort, FEMA used a Rutgers venue to conduct a public meeting to announce their national campaign to reduce natural hazard insurance losses through mitigation measures. The meeting was held at the Rutgers University Labor Education Building where over 125 persons attended. Richard Moore, the Associate Director for Mitigation and one of the speakers had informed the audience that FEMA's goal was to make mitigation the foundation of emergency management. There appears to be an opportunity to blend the national mitigation strategies into the New Jersey shoreline management plan. The effort to reduce loss through mitigation strategies seems to be consistent with the state's efforts to protect and manage the shoreline. Possible strategies for hazard mitigation were discussed throughout the meeting and numerous hazard mitigation and risk reduction publications were obtained.

9/13/94
Jersey Shore Partnership Meeting: Dr. Norbert P. Psuty made a presentation to the Jersey Shore Partnership's Technical Committee regarding Reassessment Project's objectives and progress, and welcomed their participation mentioning existing avenues for involvement.

9/15/94
Media Interview: Dr. Norbert P. Psuty was interviewed by Channel 21 News regarding shore protection topics of recent interest and the Reassessment Project.

9/16/94
Long Beach Island Gardening Club Meeting: Project Staff members met with approximately 90 interested citizens in Long Beach Island and informed them of the Project and its objectives, explaining how the final document would affect shoreline communities.

9/21/94
Atlantic County Planning Advisory Board Meeting: Dr. Norbert Psuty met with Board members in Atlantic City and spoke of theReassessment Project and coastal planning issues. The beaches in Brigantine, Atlantic City, Ventnor, Margate and Longport were toured and photographed.

OCTOBER 1994

10/25/94
Mantoloking Beach Tour: A tour of key areas in Mantoloking was led by the Mayor of Mantoloking, Robert A. Roman. The tour commenced with a meeting at 10:00 AM conducted by Mayor Roman at the Municipal Building where historical data on Mantoloking was obtained and data on the Mantoloking shoreline were recorded. Some handouts also were obtained; one handout dealt with coastal dunes in Mantoloking, another consisted of a Flood Insurance Study for Mantoloking. Several areas were visited, and photos and notes taken at each site.

10/25/94
Dune Stabilization Seminar: Dr. Psuty spoke at a Dune Stabilization Seminar held at the Lacey Township Library at 1:00 PM, in which mention of the project was made and a slide presentation educating participants on coastal processes was conducted. Some interested citizens at this seminar expressed an interest in the project and requested to be on the project's mailing list. Handouts on New Jersey's Shoreline Future were distributed and some information on dune planting methods was obtained.

10/25/94
General Citizens Advisory Committee Meeting:
This meeting was an effort to meet with as many interested citizens for the Citizens Advisory Committee as possible. The meeting was held at the Municipal Hall in Little Egg Harbor at 6:00 PM with more than 50 people in attendance. Elections for County Chairpersons were held and a brief explanation of tasks that these committees were to accomplish with the help of the newly elected County Chairperson was discussed.

10/29/94
Beach Tours: Cape May, Ocean City, Margate, and Ventnor: Cape May City and Ocean City were the two sites toured in Cape May County. The Mayor of Cape May City, Robert W. Elwell, Sr., met with Dr. Psuty and some Working Committee members to evaluate, photograph, and record data about Cape May City's key shore areas. Henry Knight, mayor of Ocean City, conducted a tour of Ocean City's key shore areas where an evaluation was also made, and photographs as well as notes were also taken. Margate and Ventnor were the two cities visited in Atlantic County on the same day. The mayor of Margate, William Ross, conducted a tour in this city, and Ventnor's City Manager, Charles Beirne, led a tour in Ventnor. Evaluations were made in these two cities' key shore areas and shore management ordinances from both of these Atlantic County cities were acquired.

NOVEMBER 1994

American Littoral Society Meetings:
11/5/94 (Saturday, November 5, 1994, 3:00 PM: Monmouth County)
11/6/94 (Sunday, November 6, 1994, 3:00 PM: Atlantic/Cape May Counties)
11/12/94 (Saturday, November 12, 1994, 3:00 PM: Princeton area)
11/13/94 (Sunday, November 13, 1994, 3:00 PM: Ocean County)

Mr. Dery Bennett led the discussion at each of these four meetings. Dr. Psuty was invited to conduct a discussion about the New Jersey's Shoreline Future project and to lead a "question and answer session." Literature on the project was handed out, the display board was set up, and questionnaires were distributed and responded to. There were between 10-50 persons in attendance at each of these meetings. The following is a list of dates and sites of American Littoral Society meetings where members of the project team discussed and presented information on New Jersey's Shoreline Future:

11/14/94
State Legislative Briefing: Mr. Michael P. De Luca, Chairperson of the Local Policy Sub-Committee and a member of the Working Committee, conducted a briefing for State legislators and their staff at the Legislative Office Building in Trenton. Shore protection issues were discussed at this briefing along with other activities of the Institute of Marine and Coastal Sciences. Mr. De Luca had conducted a similar briefing for Federal legislators and staff in Washington D.C. in August 1994.

11/16/94
New Jersey State League of Municipalities Conference: This Conference featured a panel presentation on the significance of coastal management for municipal officials. Panel members included mayors Mancini (Long Beach Township), Winterstella (Manasquan), and Pringle (Belmar), as well as Dr. Norbert Psuty, Mr. Anthony Mangeri, and Mr. Steven Whitney. The conference was held at 10:45 AM at the Atlantic City Convention Center. Over 50 persons attended the Conference.

11/30/94
Environmental Roundtable Meeting: This meeting, organized by the Monmouth County Planning Board, was set up for the purpose of informing participants of the New Jersey's Shoreline Future project. Dr. Psuty conducted a talk and then led a "question and answer session" in which various concerns surfaced for discussion. Handouts were distributed among the participants and new members for the Citizens Advisory Committee were signed on. The meeting was held at 7:00 PM at the Taylor Pavilion in Belmar. Over 70 persons attended.

County Citizens Advisory Committee Meetings:
11/16/94 (Atlantic/Cape May Counties)
11/30/94 (Monmouth County)
12/5/94 (Ocean County)

The Atlantic/Cape May Citizens Advisory Committee held its first meeting at the Ocean City Music Pier at 7:00 PM. There were about 10 people in attendance. **Dr. Stewart Farrell**, the County Chairperson, and Mr. Michael P. De Luca led the discussion.

Monmouth County held its first Citizens Advisory Committee meeting after the County's Environmental Roundtable Meeting at the Taylor Pavilion at 7:00 PM. **Mr. David Grant**, the County Chairperson, led the discussion. Some of the Environmental Roundtable participants signed on to the Monmouth Committee, attended the Citizens Advisory Committee meeting and joined in the discussion of potential White Paper topics.

A Citizens Advisory Committee meeting for Ocean County was held at the Ocean County Administrative Building in Toms River at 7:00 PM. **Mr. Kenneth Smith** led the discussion in a group of about 13 participants. A slide presentation was conducted by which information about beach nourishment in Florida and New Jersey was disseminated. Mr. Smith planned to develop a survey for potential White Paper topic ranking.

DECEMBER 1994

12/6/94
Federal Coastal Management: Representatives from the Coastal Zone Management Program of the National Oceanic and Atmospheric Administration met with Dr. Psuty and Mr. Michael P. De Luca at the Institute of Marine and Coastal Sciences from 1:00 PM to 3:00 PM. The purpose of this meeting was for the Coastal Zone Management Review Team to gain an understanding of the Rutgers' interaction with the NJ Department of Environmental Protection, as well as to evaluate efforts in the reassessment of the Shore Protection Master Plan and progress on the Mullica River National Estuarine Research Reserve. Display boards with key information and photographs on coastal issues were displayed and project progress was discussed with the NOAA representatives.

12/15/94
New Jersey General Assembly: The Institute of Marine and Coastal Sciences was honored and commended at the New Jersey State Assembly for all of its endeavors and accomplishments. Displays with information on the New Jersey's Shoreline Future project as well as other Institute projects were set up in the State House in Trenton. Handouts on the New Jersey's Shoreline Future project were distributed among legislators and visitors.

JANUARY 1995

1/11/95
Jersey Shore Partnership Board Meeting: This meeting was held at 2:30 PM in Lincroft, NJ. Dr. Norbert Psuty attended this meeting to answer questions and to discuss the objectives and progress of the New Jersey's Shoreline Future Project. The Jersey Shore Partnership announced its support for the New Jersey's Shoreline Future Project.

1/11/95
Ocean County Citizens Advisory Committee Meeting: The Ocean Citizens Advisory Committee met at 7:00 PM at the Ocean County Administrative Building in Toms River, NJ. There were approximately 33 people in attendance. Ken Smith provided the committee with a checklist he had created regarding shoreline issues of concern. The group had suggested a few revisions for the checklist. Mr. Smith had also presented the group with his three basic alternatives for shore management. Some discussion ensued on these alternatives. Dr. Norbert Psuty helped clarify confusion about the project's goals which had come up during the group discussion.

1/17/95

Atlantic/Cape May Citizens Advisory Committee Meeting: The Atlantic/Cape May Citizens Advisory Committee met at the Ocean City Music Pier at 7:00 PM. There were 20 people in attendance. The three topics discussed were dune management, sea level rise and the effects of beach cleaning. Daniel Collins made a presentation on his White Paper draft regarding sea level rise. The Citizens Advisory Committee was requested to gather copies of ordinances by municipality. Mike De Luca gave an update on the project's progress, including beach walks, other meetings and Steering Committee membership. The establishment of an Education Sub-Committee to include educators from within the Atlantic/Cape May County area was discussed. A Committee member reemphasized the great interest in shore protection within back bay communities and he was assured that this issue of concern was part of the White Paper topic list.

1/18/95

General Steering Committee Meeting: This meeting was held at 12:30 PM at the Institute of Marine and Coastal Sciences, Rutgers University. There were over 60 people in attendance. The following presentations were made: "Shore Protection and the Jersey Shore Partnership," by Thomas Gagliano; "Engineered Approaches to Shore Protection," by Dr. Michael Bruno; "Recent Changes in Federal Emergency Management Programs," by Anthony Mangeri; an update on the Citizens Advisory Committee groups' progress, by Sally Dudley; and, a "Status Report on New Jersey's Shoreline Future," by Bernard Moore. A question and answer session followed each of these presentations. The meeting then concluded with a status report on New Jersey's Shoreline Future and a general discussion of White Paper topics. The minutes for this meeting were distributed to approximately 450 persons who are on the Advisory Board Committees and to those who have applied to be on the project's mailing list.

1/24/95

Jersey Shore Partnership Sub-Committee Meeting: This meeting was held at 11:30 AM in Lincroft, NJ. Dr. Norbert Psuty attended this meeting where he answered questions and reported on the progress of the project. The Jersey Shore Partnership stated that assistance in the reassessment of the NJ Shore Protection Master Plan is one of their priorities for 1995.

1/25/95

Joint Senate & General Assembly Beach Erosion Commission: This public hearing of the New Jersey Legislature, held at 11:00 AM at Ocean City Municipal Hall's Council Chambers, invited local officials to discuss coastal issues such as shore protection, regional coastal studies, dune development, beach retention, and other beach erosion issues. Dr. Norbert Psuty attended this meeting and joined in the discussion of coastal issues. Literature on the project was sent to the Beach Erosion Commission for distribution among the commission members and others.

1/27/95

Meeting with NJDEP Staff: Dr. Norbert Psuty, Susane Pata and Janice McDonnell met with NJDEP's Steven Whitney and Dorina Frizzera at 10:00 AM at the Institute of Marine and Coastal Sciences. The project's time frame, budget and structure were discussed. The two options for the final product's structure were either a three volume Shore Master Plan, or a holistic approach encompassing all facets within one volume. Copies of the October 1 - December 31, 1994 Progress Report were given to the NJDEP Staff Members for distribution.

FEBRUARY 1995

2/13/95

Meeting with Ocean County Chairperson, Ken Smith: Ken Smith met with Working Committee Staff Members at 10:00 AM at the Institute of Marine and Coastal Sciences to discuss project topics of concern. He emphasized the method of determining the cost/benefit ratio that would tend to be driven by the utilization of the beach. He provided the staff with names of various economists that may possibly help with the project's economy study. Mr. Smith concluded that however the USACE wants to proceed with all of the changes in funding, the project should be in tune with the economics of the coastline.

2/27/95

Ocean & Atlantic/Cape May Citizens Advisory Committee Meeting: The Ocean and Atlantic/Cape May Citizens Advisory Committees met at 7:00 PM at the Municipal Building in Little Egg Harbor. There were about 30- 35 people in attendance. The following presentations were made for the members who could not attend the General Steering Committee Meeting on January 18: "Engineered Approaches for Shoreline Management," by Dr. Mike Bruno and "Sea-Level Rise," by Dan Collins. A question and answer session followed each of the presentations. The participants later broke out into their respective Citizens Advisory Committee groups. The groups prioritized White Paper topics and discussed filling in gaps of coastal community representation as well as filling in gaps of coastal community shoreline data.

MARCH 1995

3/2/95

Monmouth Citizens Advisory Committee Meeting: This meeting was held at 7:30 PM at the First Aid Building in Avon-by-the-Sea. David Grant and Janice McDonnell facilitated the meeting. There were 25 people in attendance. The main objective of the meeting was to create a network of interested citizens within Monmouth County and to reintroduce the Committee charges to this particular Citizens Advisory Committee. There was an extensive review and discussion of the NJ's Shoreline Future project's questionnaire and White Paper topic list.

3/9/95

Jersey Shore Partnership Executive Board Meeting: This meeting was held at 2:30 PM at the Ocean Place Hilton in Long Branch, NJ. Dr. Norbert Psuty was invited to attend this meeting to answer questions and to discuss the progress of the New Jersey's Shoreline Future Project. Discussion among participants included support for continued US Army Corp commitment. There was a general request for a representative from the Jersey Shore Partnership to provide assistance in coastal economic data.

3/29/95

10th District Telecasting: Assemblyman David Wolfe spoke to his constituency via a local telecasting at 3:30 PM in Brick, NJ. Dr. Norbert Psuty participated in a discussion of the combination of Blue Acres issues and the progress of the reassessment of the Shore Protection Master Plan.

APRIL 1995

4/29/95

Cook Campus Agricultural Field Day Presentation: This all-day campus event, which attracts thousands of visitors every year, took place throughout Cook Campus. The Institute of Marine & Coastal Sciences held an Open House Event from mid-morning to mid-afternoon in the building's main lobby. A revised poster display dealing with the *New Jersey's Shoreline Future* Project objectives was displayed in the Institute of Marine & Coastal Science's foyer where many passerbys had an opportunity to read about the project. A sign-up sheet and some handouts were placed by the display for the distribution of project information. Many non-coastal residents signed on to the Citizens Advisory Committee. As part of the Open House Event, Dr. Norbert Psuty conducted a slide presentation and lecture on the coastal geomorphology of New Jersey's shoreline while also informing the audience about the *New Jersey's Shoreline Future* project.

MAY 1995

5/12/95

The Corps & the Coast Conference: Dr. Norbert Psuty attended this conference which was held at 9:00 AM in Avalon. The conference consisted of speakers and a panelists representing elected officials, members of the NJDEP, the US Army Corps of Engineers, and members from other organizations. The effects of the possible Federal cuts in beach management funding for New Jersey was the most prominent topic of concern.

5/23/95

Beach Erosion Commission Meeting: The State Beach Erosion Commission heard testimony of efforts to update and reassess the Shore Protection Master Plan and of the proposed reduction in Federal shore protection money at 2:00 PM in the Jenkinson Pavilion of Point Pleasant. There were about 20 people in attendance. At the Commission's invitation, Dr. Norbert Psuty provided a general background of the coastal geomorphology of New Jersey's shoreline and reported on the *New Jersey's Shoreline Future* project's progress to the group of meeting participants and panelists. He addressed questions from the audience, panelists, and interviewers from local television stations. The poster/display for the project was exhibited and handouts were distributed. A Citizens Advisory Committee sign up sheet was also passed around for interested citizens.

5/31/95

Atlantic/Cape May Citizens Advisory Committee Meeting: Citizens Advisory Committee members from Atlantic and Cape May Counties gathered for a meeting at 7:00 PM at the Ocean City Music Pier. There were 20-25 people in attendance. Michael DeLuca chaired the meeting. A few Committee members volunteered to help finalize the collection of data. Dates for coastal festivals and conferences were mentioned to help in networking and displaying information about the project. Some Atlantic/Cape May County elected officials were mentioned as potential replacements for inactive members on the Steering Committee.

JUNE 1995

6/6/95

Ocean Citizens Advisory Committee Meeting: Citizens Advisory Committee members from Ocean County gathered for a meeting at 7:00 PM at the Ocean County Administrative Building in Toms River. There were approximately 15-20 people in attendance. Ken Smith and Susane Pata facilitated the meeting. Tasks for finalizing the collection of data were listed and explained. Citizens volunteered to hang flyers created for each of Ocean County's coastal communities in order to recruit more interested citizens. Comments were made on the panel discussion to be organized and take place in the late summer.

6/7/95

Jersey Shore Partnership Conference: The Conference, *Building Beaches, Business & Beyond: Investing in the Jersey Shore*, which was sponsored by the Jersey Shore Partnership, was held from 8:00 AM to 4:00 PM at the Ocean Place Hilton in Long Branch. There were four panel presentations that took place throughout the day each dealing with one of the following topics: a CEO Roundtable - "The Jersey Shore: For Work, For Play, Four Seasons;" a Legislators Forum dealing with the Jersey Shore legislative action in Trenton; "Building Business - Lending, Investment and Development Strategies;" and, "Building Beaches" which provided an update on actions for maintenance and rebuilding. Dr. Norbert Psuty, Michael DeLuca, Susane Pata and Greg Martinelli attended the conference, gathered data from various institutions, and made contacts with organizations from panel discussions and from shoreline business representatives working at exhibit booths.

6/8/95

Monmouth Citizens Advisory Committee Meeting: Citizens Advisory Committee members from Monmouth County gathered for a meeting at 6:00 PM at Sandy Hook. Janice McDonnell, Susane Pata, and David Grant facilitated the meeting. Tasks, such as collecting the rest of the ordinances, beach badge sales data, and historical data were emphasized as priorities. Planning for a panel presentation was discussed and suggestions for locations and potential panelists were mentioned. Citizens volunteered to hang some flyers within each coastal community to recruit more interested citizens. David Grant conducted a brief history lesson of Sandy Hook.

6/12/95

Beach Walks: ***Long Beach & Beach Haven:*** Dr. Norbert Psuty, Susane Pata, and Daniel Collins met with Mayor James Mancini and Commissioner Frank Pescatore of Long Beach Township at 10:30 AM. The beach walk began at Brant Beach and moved on to North Beach, Loveladies and Harvey Cedars. Strengths and weaknesses of each of these beaches were mentioned, beach management practices were cited, and structures were evaluated. Photographs and notes were taken at each of these sites in Long Beach Township. A SandPaper reporter followed up on the tour with an editorial tying in the purpose of the mayoral beach walks to the *New Jersey's Shoreline Future* project.

6/13/95

Monmouth-Ocean Development Council Meeting: Upon the council's invitation, Dr. Norbert Psuty spoke to the group about the *New Jersey's Shoreline Future* Project. He informed the group of the project's objectives and its progress to date.

6/15/95

Beach Walks: ***Upper Township, Sea Isle City & Avalon:*** Mayor Andrew McCrosson and his staff led Dr. Norbert Psuty and the Rutgers Staff on a beach walk of Strathmere pointing out erosional problems of the shoreline, and discussing beach management methods and some historical aspects of Strathmere. At the next beach tour stop, Kathy Giebel and Terry Berry of Sea Isle City met with Rutgers Staff members and took them on a tour of Sea Isle City's oceanfront area discussing beach management methods and some of the area's history. Later that afternoon, the Rutgers Staff met with Harry deButts, the Town Engineer of Avalon. He conducted a slide presentation and tour of the beach, stopping at areas of interest and concern along the shoreline. Some of these areas included the dredging operation at Townsend Inlet and the experimental research beach area with little or no maintenance in terms of beach cleaning or dune grass planting.

6/19/95

Meeting with OEM: The Rutgers Staff proposed to conduct three to four storm impact case scenarios along New Jersey's coastline and has submitted a proposal to FEMA for consideration. After the proposal review, FEMA declared that the document necessitated additional information. Anthony Mangeri and another Office of Emergency Management representative met with Dr. Norbert Psuty and some Rutgers Staff members to discuss the essential details missing within the storm impact case scenario proposal. Several Rutgers Staff members rewrote parts of the proposal to include the additional information. The drafts were edited and reworked into the proposal. They were later re-submitted to FEMA for approval and support.

6/23/95

Beach Walks: ***Ventnor & Atlantic City:*** Joel Fogel, a Citizens Advisory Committee member, helped Susane Pata set up these two beach tours. Ventnor mayor, Ted Bergman, and his staff took Dr. Norbert Psuty and Susane Pata on a tour of the beach where questions concerning the area were answered and evaluations were made. The shoreline area's strong and weak points, as well as its management methods were pointed out and discussed. The mayor of Atlantic City, James Whelan, and his staff met with the Rutgers Staff at City Hall later that day and discussed Atlantic City's shoreline mentioning its strengths, weaknesses, and its management methods. Later, a beach tour was conducted by the Town Engineer, Michael Ty. Mr. Ty took the group out to see the geo-tubes being placed within the beach's dune system as well as some other areas of interest up and down the coast.

JULY 1995

7/16-21/95

Coastal Zone '95: This Conference was held Tampa, Florida at the Hilton Hotel. There were approximately 400 persons in attendance from throughout the U.S. and several foreign countries. A full day was devoted to a poster session focusing on coastal projects. Michael Siegel and Susane Pata both planned and created a poster for this session based on the *New Jersey's Shoreline Future* reassessment project. This poster was broken down into four categories with photographs and statements to inform conference attendees of the New Jersey State effort: 1) Rationale, 2) Purpose, 3) Process, and, 4) Products. Michael De Luca and Kit Wright, a Citizens Advisory Committee member from Ocean City, attended the Conference as project representatives and served as interpreters for the poster. Contacts with interested citizens were made and project literature was distributed.

7/18/95

Beach Walks: ***Lavallette, Ortley, Seaside Heights, South Seaside Park and Seaside Park*:** Dr. Norbert Psuty and Susane Pata met with Mayor Aileen Barow and a group of interested citizens to discuss and tour Lavallette's oceanfront. Mayor Barow stated that the Borough is working on making its dune system more effective and requested additional information on dune vegetation diversity which Susane later provided from the Soil Conservation Service. The next meeting location was Ortley Beach with Mayor Bud Aldrich and two Dover Township staff members met with Dr. Psuty and Susane at the Beach Patrol Building to discuss the oceanfront's management operations. The turn-around time on dune fencing permits dealing with the removal and replacement of the fences during the fall and spring seasons was one of the mayor's primary concerns. Dover Township officials claimed that the dune fence permitting process to remove and replace fencing is very slow. One of the main reasons behind the concern in slow permit turn-around time was that the opportunity for recreational use was being reduced as sand dunes were accumulating over the fences on the beach. Michael Redpath, the Public Information Officer and the Media Contact of Seaside Heights met with Dr. Psuty and Susane to tour the oceanfront and discuss the different situations of Seaside Heights' planning and development. The Rutgers staff members were not informed of a management plan for Seaside Heights other than maintaining a decent size beach for recreation and bathers, and this has occurred naturally over the years. South Seaside Park was the next location for meeting with elected town officials. Mayor Bill Zimmerman of Berkeley Township and his staff demonstrated and explained the different aspects of the oceanfront's dune system in South Seaside Park. The Township wants to ensure that all gaps are closed for a continuous dune system. Most of the dune vegetation is natural. Dr. Psuty and Susane met with Mayor John Peterson and some staff members at Seaside Park. Seaside Park has a well-maintained dune system. Most of the dunes are large. These dunes have plenty of vegetation and are fertilized regularly. The mayor and staff were very interested in learning more about dune vegetation diversity, and Susane has sent them some materials from the Soil Conservation Service.

Photos and notes were taken at each of the five tour sites. Requested information from each of these sites, such as beach tag sales' records, dune ordinances, and reconnaissance reports will be sent to Dr. Psuty or Susane.

7/25/95

Beach Walks: ***Ship Bottom, Surf City and Barnegat Light:*** Surf City's Mayor Leonard Connors and staff members met with Dr. Psuty and Susane. The mayor briefed Dr. Psuty and Susane on Surf City's beach management options and its historical aspects as the group toured the 1.62 miles of beach in a 4-wheel drive vehicle. There are beach access entrances on street ends and some of these access points have wooden dune walkovers. By providing such walkovers for beach access entrances, the city believes the dunes and their vegetation will be protected from trespassers, thereby maintaining dune height as much as possible. These dunes are manmade and are maintained by the town. In some locations of Surf City, the dune's underfill is composed of gravel. Other methods of retaining sand in the back part of the beach are placing hay at beach entrances and placing polypropylene sandbags under the dunes.

Mayor Robert Nissen of Ship Bottom met with Dr. Psuty and Susane and took them to the different beach access entrances to demonstrate beach management methods and the effects of these methods on Ship Bottom's beachfront. Every street end has a beach access entrance; some of these entrances have handicap access. The ordinance for dune maintenance states that the dune elevation must be 16 feet at the building line. Many homes behind these dunes have a view of the ocean. Many homes have also been constructed on pilings. Not every street end has a bulkhead but the ones that do are the ones that also have groins.

Mayor Kirk O. Larson of Barnegat Light met with the two Rutgers personnel and took them onto the beach for a tour. Barnegat Light's beaches are wide with sizable dunes and significant dune vegetation. There is a nesting area at 5th Street that is owned by the State. The mayor commented that if this bird nesting area were sold to the town, the public may demand that it be developed because it is such a vast area of beach. There is no mapped dune zone. The dune ordinance states that dunes cannot be disturbed and dune vegetation must be maintained.

Notes and photos were taken at each of the three tour sites. Data such as beach tag sales' records were requested from each of these sites.

AUGUST 1995

8/8/95

Beach Walks: ***Point Pleasant Beach, Bayhead, Brick and Island Beach State Park:*** Dr. Psuty and Susane met with John S. Mullan of Baypointe Engineering in Point Pleasant Beach on August 8, 1995. Mr. Mullan, one of Point Pleasant Beach's engineers gave Dr. Psuty and Susane a draft of the Proposed Dune Enhancement Plans for Point Pleasant Beach and discussed the aspects and details involved within this Proposal. Mr. Mullan later took the two Rutgers staff members on a walking tour of the beach to demonstrate beach management methods in effect as well as other beach happenings. The Borough does not own any beach front - it is all privately owned. The only thing the Borough has control over are the dune ordinances that were put in effect November 1984. All the beaches are privately owned, except for the amusement park area, and that beach is free. The private owners supply their own guards and charge their own fees. They also pay taxes to the Borough. Bay Head Council President, Ambrose Hardwick, and other Borough staff met with Dr. Psuty and Susane where they described the objectives and explained different aspects about the reassessment project to interested tour participants. Soon after this discussion, the two Rutgers staff members were led on a beach walk. Different beach access entrances were visited and groin effects were discussed. The '92 Storm had created a large offset in the groin area at Harris Street, but since then the area had been rebuilt. Some parts of the beach have sandbags placed underneath the dune system. Mayor Joseph Scarpelli of Brick and his group of staff members met with Dr. Psuty and Susane at the Ocean Beach III entrance. One main concern at this beach is the location of the large exposed condominium. It is located in front of a very narrow area of beach. The beach has a dune system consisting of a stretch of small dunes, some vegetation, and some fencing. This dune system does not continue along the front of the condominium. Island Beach State Park was the last tour stop of the day. Dr. Psuty and Susane met with William Vibbert, the Park's Superintendent. They were later taken on a tour of the 9.5

miles of beach riding in a 4-wheel drive vehicle. This stretch of oceanfront is separated into different sections, each containing its own set of rules and regulations for maintenance and use. For example, the Northern Natural Area has limited beach use. Other sections prohibit beach vehicle use, whereas one particular section allows beach buggies onto the beach. The dune system varies from section to section: within the Northern Natural Area, the beach grass had not been doing well; at Bathing Beach No. 1, there is intensive fencing with continuous dunes and a significant amount of vegetation; at Beach Area 15, the high dunes present are susceptible to scarping; from Beach Area 23 to the inlet, the dunes are the healthiest, as they are of a decent size and densely vegetated; and within the area between the oceanfront beach and the bay there are many sizable dunes with dense and diverse vegetation. Photos and notes were taken at each of these four tour sites. Beach tag sales' records were requested at each of the tour sites.

8/28/95

Beach Erosion Commission Meeting: Beach Erosion Commission members and participants met at Monmouth Beach to discuss the status of the shoreline, with emphasis on Monmouth County, after Hurricane Felix. There were a series of presentations made by representatives from different organizations: the USACE representatives discussed the Monmouth Beach nourishment project; Bernie Moore of NJDEP spoke of the coastline in general; the individual who is marketing the beach discs made a presentation on the effectiveness of these discs; and, Dr. Michael Bruno of Stevens Institute of Technology made a presentation on the beachsaver reefs being monitored and how they have been functioning in the recent months.

8/29/95

Beach Walks: ***Cape May Point and Wildwood Crest:*** Dr. Psuty and Susane met with Cape May Point Mayor Malcolm Fraser and Jim Handley. Mayor Fraser briefed the Rutgers staff members on Cape May Point's historical background using photographs and newspaper articles. Later,the group went on a tour of the oceanfront. The dunes have dense vegetation, continuous fencing, and access controlled paths to avoid the event of trespassers on dunes. These dunes may be increased in height if need be as there is no set elevation. The beaches have had beach tags since the 1970s, but the sales do not help pay for the beach programs in Cape May Point. Mayor John Pantalone and the Captain of the Beach Patrol, Bud Johnson, met with Dr. Psuty and Susane at Wildwood Crest. Mayor Pantalone hosted a tour of Wildwood Crest's beach using a 4-wheel drive vehicle and stopping at different areas of interest for discussion. Wildwood Crest is 44 blocks long. The beaches are cleaned year round; the entire beach is owned by the municipality. There are no jetties or groins within this municipality's oceanfront. The dunes on this beach are natural. The southern end of Wildwood Crest has dunes that have formed against the bulkhead and, the northern end has dunes with much vegetation. The formation of dunes may have been facilitated due to the southeast winds which are prevalent 90% of the year. Photos and notes were taken at each of these two tour sites. Beach tag sales' records data was requested at each of these sites.

8/31/95

Meeting with NJDEP Staff: Dr. Norbert Psuty, Michael De Luca, Janice McDonnell and Susane Pata met with Steven Whitney of NJDEP at 10:00 AM at the Institute of Marine & Coastal Sciences. September 1996 is the end of the NJDEP contract for the reassessment of the New Jersey Shore Protection Master Plan and a draft of the Final Report will be submitted to NJDEP by then. Working Committee members requested to meet with NJDEP Commissioner, Robert Shinn, in order to discuss perspectives on the project. The Final Report will incorporate information from the 1981 Plan and newly accumulated project data combining it into one. Steven Whitney will contact Working Committee staff members regarding feasible dates for his participation in the upcoming panel presentations. The project will receive funds to work with FEMA on storm impact case scenarios. The information will be incorporated into the Master Plan.

SEPTEMBER 1995

9/7/95

Beach Walks: ***Wildwood, and North Wildwood:*** Dr. Psuty and Susane met with Wildwood's Mayor Fred Wager and the Director of Planning and Development, Clark Doran, on September 7, 1995. Dr. Psuty briefed them on the objectives of the reassessment project. The mayor and the director took the two Rutgers staff members to the oceanfront site being proposed for the extension of the Civic Center. The Center would be extended several tens of meters to the seaward side of the boardwalk. This is part of Wildwood's plan called "Wildwood 2000" to help boost the town's economy. Wildwood is considering a dune program, but they are not very concerned with designing one because the beaches are very wide and therefore, they do not feel the need for shore protection. Dr. Psuty and Susane met with North Wildwood's Council President, Robert L. McCullion. He took the group on a beach tour in a 4-wheel drive vehicle starting from the North Wildwood Beach Patrol Building. There are not many different management strategies for the different management methods that are present in each area. Some dunes are where they are because it is where they had formed naturally. Some dunes are located in the middle of the beach area. The dunes closest to the water have lost their vegetation and fencing. There are no ordinances related to dune structures, but there is a program on putting sand fences in. Photos and notes were taken at each of these two tour sites. Beach tag sales' records and dune ordinances were requested at each of these sites.

9/13/95

Staff Retreat Meeting: Dr. Norbert Psuty, Michael De Luca, Janice McDonnell and Susane Pata gathered at the Continuing Education Center for a Staff Retreat Meeting from 9:00 AM to 5:00 PM. Coastal issues, problems, and interests were discussed. The major problem found along the coast was the lack of purposeful understanding of the project. Many people have a lack of appreciation for the project and are not knowledgeable of a solution to the coastal problem. The reassessed Master Plan needs to be more simple and less bureaucratic (unlike the 1981 Plan) in order for people to have a better understanding and appreciation for the document. Issues, problems and interests of or relating to individual or several of the coastal communities within New Jersey were listed. Each of these listed will have a place in the reassessed Master Plan. An outline was drafted and different staff members were assigned to draft parts of the outline.

9/15/95

Beach Walks: ***Ocean Grove, Manasquan, Allenhurst:*** Ocean Grove's Beach Supervisor, David Shotwell and the Town Engineer, John Shotwell, met with Dr. Psuty and Susane. David Shotwell explained that Ocean Grove can exercise beach management methods without asking for the mayor's permission. The restoration after the storm of 1992, however, was done by FEMA. The beach has groins, some with and some without notches. David Shotwell stated that the beach area is funded entirely through beach tag sales. Manasquan's Mayor John Winterstella met with Dr. Psuty and Susane at where they took a tour of Manasquan's 1 mile beach. The dune program is working well along the oceanfront and the Borough follows a dune fertilization schedule to maintain healthy vegetation growth. The mayor stated that the Borough would like to bulldoze more sand up to the fence, but since this kind of maintenance is a burden at $10,000 a month. They would like for the USACE to become involved. Allenhurst's Borough Administrator, Vito Gadaleta, met with Dr. Psuty and Susane and conducted a tour of Allenhurst's oceanfront. The elevation of the beach in the summer is usually a build up of sand that covers the groins and reaches up the walkway; but, during late summer 1995, the conditions were like winter and much of the groins were exposed on the beach. Allenhurst has lost a considerable amount of beach profile this year. There is a 17 foot wall along the back of the beach which serves as a protective barrier for the boardwalk. The boardwalk is located about 15-16 feet above the beach and has not been damaged in previous storms. Photos and notes were taken at each of these three tour sites. Beach tag sales' records and coastal zone ordinances were requested from each of these sites.

9/21/95

Beach Walks: ***Belmar, Asbury Park, Loch Arbour, and Deal:*** Loch Arbour's Mayor James V. Kiely and some of his staff met with Dr. Psuty and Susane. The group took the Rutgers staff members on a beach tour and discussed the differences in the beach's profile compared to the previous two summers, with comments indicating that the beach was much smaller last summer. One interested citizen mentioned the private owners who live along the oceanfront are attempting to create their own management plan, since there is no management plan for this area. One of the things they have done is to create a large wall of sand in the likeness of a "dune," on which they will be planting dune grass in October. Some homeowners are very opposed to this large dune because it obstructs their view of the ocean. Belmar's Mayor Kenneth Pringle met with Dr. Psuty and Susane to discuss a few beach management aspects. Mayor Pringle stated that there is a policy toward strategic withdrawal from dangerous areas. There are some dunes along the back of the beach and these dunes are fairly small with dune grass on some. The beach sand has been pushed up and flattened to convenience beachgoers. Beach tag sales have helped in beach maintenance. Mayor Pringle's two major issues of concern are: 1) fitting coastal communities into the shore section of development and redevelopment so that programs have a broader perspective; and, 2) compensation for providing services, similar to the Green Acres Program. Anthony Del Pizzo, the Director of Public Maintenance for Asbury Park, Ronald E. Cassel, a member of the Governing Body, and, Anthony J. Nuccio, the Director of Community Relations and Social Services met with Dr. Psuty and Susane and discussed some details about the reassessment project before touching on the subject of Asbury Park's deteriorating beaches. There is not enough space for dunes on the beach, but there is a wooden bulkhead placed parallel to the boardwalk boxing everything in under the boardwalk. There is an "L" shaped groin which was constructed in the 1970s in front of the Paramount Convention Theatre. At one point in history, the beaches went far out seaward beyond the Paramount Convention Theatre. Today they are trying to save whatever they can in oceanfront and sand. The City of Asbury Park is very interested in bettering their economic development to attract tourism. Without improving this aspect of Asbury Park, they cannot do much about maintaining the coastal zone because of limited funds. Deal's Municipal Clerk, Dennis Galvin, met with Dr. Psuty and Susane and conducted a beach tour stopping at each of the several beach access areas. The residential homes closest to the ocean are on elevated land protected by a wall of rocks strategically placed along the eroded bluff. Some of these sites have no beach in front of the

homes, whereas others have some accretion of sand in front of the wall of rocks. There is one beach area that is designated for public use. Some beach access entrances are very poor with steep inclines and asphalt remains along the downward path. The lowest point in Deal is where a stream meanders through town and comes out through a pipe onto and through the beach.

9/26/95
Meeting with NJ OEM Officer: Anthony Mangeri of the NJ OEM met with Dr. Norbert Psuty and Susane Pata at the Institute of Marine and Coastal Sciences. The group discussed the contract and time frame for the Storm Impact Case Scenarios which will be developed as part of the reassessment of the Shore Protection Master. The duration of the active portion of this project will be 10 months and the timeline is one year. Products include Progress Reports which will be written up on a quarterly basis and the production of a handout based on the scenarios to be distributed throughout different communities. Mr. Mangeri will request a grant letter and a contract number and the case scenario project will begin immediately after this letter is obtained.

OCTOBER 1995

10/5/95
Beach Walk: Sea Girt: Dr. Norbert Psuty and Susane Pata visited with Mayor William M. MacInnes to discuss and tour Sea Girt's oceanfront. The boardwalk goes down 3/4 the length of the borough. Sea Girt is approximately 1 mile long and is bound by an area called Wreck Pond. Wooden bulkheads and groins have been removed because it was felt that they were causing localized erosion. Sea Girt's shore management responsibility may rest in either the public or private sector. Split jurisdictions and their differences sometimes cause problems with shore management reponsibility. Policy decision-making and the filtering down of State level policies to apply to the community level may not be uniform throughout different jurisdictions within a community. This issue also occurs in other parts of the State and must be addressed. Notes and photos were taken at each of the stops made by the mayor.

10/27/95
The Jersey Shore Partnership Business Meeting: Susane Pata attended the business meeting for the Jersey Shore Partnership at the Trump Castle Casino Resort in Atlantic City. The meeting started with the Jersey Shore Partnership President's report which was a summary of the Partnership activities and a look at the future. The Chairman's message dealt with the importance of applying specific programs for the New Jersey's coastal region which may promote the growth of business and economic development. Some program "vehicles" mentioned were: partnerships, international trade, targeted industries and urban development. An open discussion of the members' comments and suggestions followed after the speakers made their presentations. The final item on the agenda was a reception followed by a keynote address regarding issues of New Jersey's commerce and economic development. Notes were taken and materials were gathered at this meeting.

NOVEMBER 1995

11/16/95
Shore Management Presentation in France: Dr. Norbert Psuty made a presentation entitled "Mitigation as a New Strategy for Coastal Management" to an International Coastal Management Conference in Nantes, France held from November 13-20, 1995. Examples of the application of the new policy were drawn from the United States' East Coast. A manuscript is being prepared for inclusion in an international publication.

DECEMBER 1995

12/5-12/8/95
FEMA National Mitigation Conference: Dr. Norbert Psuty, Susane Pata and Michele Grace attended the 3 day FEMA Conference held in Alexandria, Virginia. Mitigation information was presented and distributed through exhibit displays, workshops, open discussions and through different contacts during conference breaks. Although the meetings focused on earthquake, hurricane, tornado and flood events, those with coastal concerns benefited from the strategy guidelines discussed for each of these disaster events because they could be used in most any disaster situation. Workshops were attended each day, notes were taken and mitigation material from different organizations were collected. A request for additional support is pending to provide funds for the analysis of this information and incorporation into the final report.

12/18/95
Beach Erosion Commission Meeting: Dr. Norbert Psuty and Susane Pata attended the Beach Erosion Commission meeting. Blue Acres issues such as the leveraging of funds were discussed with a few of the meeting participants. Meeting organizers distributed materials to participants. Comments were made by some of the participants with regard to funds for beach management. Dr. Psuty distributed project progress handouts and Susane took notes.

JANUARY 1996

1/30/96
Jersey Shore Partnership Meeting: This meeting was held 12 Noon in Tinton Falls. Dr. Norbert Psuty presented Jersey Shore Partnership members with a Project update and provided them with a progress report handout which listed task areas that have been recently completed and that are presently being worked on: Advisory Committee assignments for the Final Report; an evaluation of Project relativity to Coastal Blue Acres information; the mitigation objective and storm impact case scenarios; the web site for the Project; other coastal states' shore management evaluations; the education and outreach component; and completion of the various White Papers being created through the Project.

FEBRUARY 1996

2/15/96
Meeting with FEMA representative, Bruce Swarin: Dr. Norbert Psuty met with Bruce Swarin from FEMA to discuss information on repetitive claims with storm damage for the insurance program. They also reviewed coastal geomorphology investigations and Rutgers University's capabilites in terms of support facilities, for example. Discussion also involved new approaches within FEMA's mitigation efforts.

2/22/96
Atlantic/Cape May County Citizens Advisory Committee Meeting: This meeting was held at 7:00 PM at the Ocean City Music Pier and there were approximately 30 people in attendance. The meeting followed an agenda of presentations and discussion of White Paper topics and Project activities. Many meeting participants made comments and inquired about Coastal Blue Acres and the Project's role with regard to this issue.

2/28/96
Ocean County Citizens Advisory Committee Meeting: This meeting was held at 7:00 PM at the Dover Township Municipal Building and there were approximately 15 people in attendance. The meeting followed an agenda of presentations and discussion of White Paper topics and Project activities. Some main topics of concern among the meeting participants were about the coastline's economic value and Coastal Blue Acres.

2/29/96
Monmouth County Citizens Advisory Committee Meeting: This meeting was held at 7:00 PM at the Monmouth Beach Municipal Building and there were approximately 20 people in attendance. The meeting followed an agenda of presentations and discussion of White Paper topics and Project activities. Much of the audience discussion was centered around engineered approaches and beach nourishment. Dr. Michael Bruno had sent a representative from the the Stevens Institute of Technology, Mr. Tom Herrington, who made a presentation on engineered approaches and helped to answer questions from the audience.

MARCH 1996

3/6/96
Meeting with NJOEM State Officer, Anthony Mangeri: This meeting was held at 10:00 AM at the NJ Office of Emergency Management in West Trenton. An analysis of ideal coastal community case scenario locations was made and some key locations were discussed. Other topics of discussion included the Flood Mitigation Program, Coastal Blue Acres issues, and upcoming Emergency Management Conferences.

3/9/96
Education Workshop: The Earth Science Teacher's Association Annual Conference took place at Kean College from 9:00 AM to 2:30 PM. There were 125 people in attendance including Earth Science teachers from grades 9 through 12. Rutgers representatives set up a Project display, distributed Project handouts, and spoke about the Project to Workshop participants.

3/12/96
Meeting with NJDEP Commissioner, Robert Shinn: This meeting was held at 2:00 PM in Commissioner Robert Shinn's conference room in Trenton. Some suggestions for the Project were made by Commissioner Shinn and Assistant Commissioner Lewis Nagy in terms of partnerships with other management programs and setting up a GIS program indicating annual erosion rates for coastal reaches in New Jersey to demonstrate geomorphologic dynamics.

3/25-4/17/96
Work with Dr. Patrick Doody: Dr. Patrick Doody will be visiting from the U.K. for three weeks and will help the Working Committee with Project efforts by evaluating existing efforts, adding information from the U.K. program, and sharing insights into the process of developing an approach for the *New Jersey's Shoreline Future* Project.

3/26/96
Barnegat Light Planning Board Presentation: Dr. Norbert Psuty made a presentation about the *New Jersey's Shoreline Future* Project to the Barnegat Light Planning Board at 7:30 PM in the Borough Hall. The Planning Board had requested this presentation to serve as an update on the Project.

3/27/96

Coastal Hazard Management Plan: Writer's Workshop: This workshop was held at the Institute of Marine & Coastal Sciences from 4:00 PM to 7:30 PM. This workshop will bring together a group of 15 educators from grades 5 through 12 as well as a group of informal educators from State agencies, such as NJDEP. The group of participants will get together on a roundtable discussion about developing classroom activities for the Coastal Hazard Management Plan, also known as the *New Jersey's Shoreline Future* Project.

NEW JERSEY'S SHORELINE FUTURE
PREPARING FOR TOMORROW

REASSESSMENT OF THE NEW JERSEY
SHORE PROTECTION MASTER PLAN

A GENERAL MEETING ON COASTAL ISSUES, SHORE PROTECTION, AND MANAGEMENT STRATEGIES
January 18, 1995

Compiled by Susane Pata

Institute of Marine & Coastal Sciences
Rutgers University

INTRODUCTION

The agenda for the January 18, 1995 General Meeting of the Steering Committee consisted of:

1. Presentations by the Steering Committee members
2. Progress Reports by the CAC Chairs
3. Progress on the Reassessment Project
4. Review of White Paper topics
5. Future activities

The reassessment of the Shore Protection Master Plan, begun in April 1994, involves an update of the information that was assembled earlier and looks to produce a broad range of alternatives to mitigate the effects of coastal erosion. Part of the process will develop scenarios for post-storm recovery that local communities may use to evaluate strategies which may be applied in their situations.

Our approach to the Assessment Process is to seek public participation and involvement in every step of the project. We have been reaching out to existing organizations and sharing the goals of the project with them. We have been using their inputs to focus on particular issues for inclusion in the project. We have developed a Citizens Advisory Committee in each of the coastal counties as a means to assist in the bi-directional flow of information and to involve the coastal communities.

1. REPORTS BY STEERING COMMITTEE MEMBERS

Several Committee Members offered information regarding the organizations they represented and their involvement in Shore issues:

Senator Thomas Gagliano, President of the Jersey Shore Partnership, described the JSP as a private body with representation consisting of elected officials from the four coastal counties and, representatives from several large and small corporations and a number of nonprofit organizations. Formed shortly after the October 1991 storm, its initial thrust was to help create legislation leading to stable funding for shore protection and management. Eventually $15 million was authorized annually by the Legislature.

The JSP is currently involved in several new thrusts. Steven Kempf is looking at issues related to hazard mitigation and emergency procedures. Drs. Michael Bruno and Robert Abel work on a sub-committee looking at coastal engineering and research.

The JSP is concerned about the economic recovery and vitality of the coastal communities. For example, aid is needed in Asbury Park and Long Beach to spark an improvement to their economies. Some of the southern communities, where the beaches are excellent, have had economic downturns. The coastal economics should be integrated within shore management plans.

Dr. Michael Bruno, of Stevens Institute of Technology, made a presentation on "engineering approaches" to shoreline protection and management. Acknowledging that the best protection is a wide beach with a well-developed dune zone, he stressed that the variety of approaches should be directed toward providing this best protection, and should be evaluated relative to some dimensional standards.

Several approaches are in a trial phase along the shoreline at this time, or are being considered. They include:

Stabler Disc System - This system is in place at Spring Lake. It consists of a string of concrete discs connected to wooden piles on the beach. They are supposed to catch sand being transported along the beach face. In some areas they appear to be successful. They are unsightly when exposed on the beach.

Stabeach System - Discovered in Holland, this approach involves pumping water from the beach via a submerged pipeline. Water removed in this manner does not flow down the beach face and thereby reduces the seaward transport of sediment. The water is pumped to an outfall either offshore or to some onshore site.

Beachsaver Reefs - These are currently in place at Cape May Point, Spring Lake, and Avalon. At Avalon, monitoring has shown that there is scour at the southern end of the reef, whereas the northern end seems to be more stable. There is some erosion along the entire reef area, probably associated with the location of the inlet, the effects of the nearby bulkhead, and an outfall structure. The reef seems to be providing some protection from the inlet processes which could have affected the adjacent beach. All data from Avalon are preliminary. The Cape May Point site has been occupied a short time and all data from this area are preliminary as well. Thus far, there is an accumulation on the inland side of the reef. Following the experience at Avalon, an improved mat is being used to reduce or eliminate the problem of settling of the reef structure. Growth of organisms on the reef is being monitored to determine if they affect the performance of the reef. Preliminary studies have shown that there is no interference with the reef's performance.

Mr. Anthony Mangeri, Program Manager for NJ Disaster Preparedness Improvement and Hazard Mitigation Assistance, described the work of the State Hazard Mitigation Team (SHMT). State capabilities and resources toward natural hazard risk reduction and the State Hazard Mitigation Plan of 1992 will be reviewed and updated. The SHMT has the ability to provide technical assistance to the State, county, and local levels both from a technical/engineering perspective as well as through local planning, policies, and funding opportunities.

A Post-Disaster Hazard Mitigation Grant Program will be administered. Funds may be used for risk reduction projects at the local, county, or State level, by an eligible public sector and certain nonprofit entities. The time span for certain projects ranges from six months to one year and a half, depending on whether Environmental Impact Statements must be written. Funding through Mitigation Grant Programs includes a variety of structural and non-structural projects:

1. Seeding and sand fences for dunes
2. Structural projects, i.e. tie flex valves, Beachsaver Reefs
3. Back-bay telemetry systems to study inundation levels
4. Weather-alert radio networks
5. Community rating system on flood elevations
6. Other public awareness projects, i.e. seminars and workshops
   (Public awareness projects are easier to fund than structural projects; this kind of awareness should begin at an early age, starting at the elementary school level.)

Mitigation is any action, program, or policy that is intended to reduce or eliminate vulnerability to natural hazards, including both structural and non-structural activity. Mitigation needs to be addressed by local officials because local support is essential for mitigation initiatives. The availability of various mitigation tools is also important. An example of a tool that may be of importance to some people is acquisition. Although many people disregard the idea of acquisition, there may be some cases when certain property owners, who have wanted to move and have been unable to do so because of financial constraints, may seek such a mitigation option.

The Upton Jones Amendment (Section 1362 of the National Flood Insurance Program) has been replaced with the National Flood Insurance Mitigation Fund (NFIMF), signed in September 1994. Regulations will be published within one year. A specified amount of funds will be placed in the NFIMF account annually: $10 million in 1994; $15 million in 1995; and, $20 million will be placed every year thereafter. In the event of disaster, assistance will be provided for an eligible property owner even if flood insurance is not maintained the first time around; however, if the insurance has not been maintained up until the time of a subsequent disaster, only a reduced assistance amount will be available.

The 50/50 Match Program within the Hazard Mitigation Grant Program, has been changed. FEMA will now fund 75% of eligible projects and the applicant is required to fund 25%. Funds from foundations for grants and fellowships may be used as matches within the Hazard Mitigation

Program. Sponsorship and free service may also be pursued at the county and local level to help with funding.

Sally Dudley, Executive Director of the Association of New Jersey Environmental Commissioners (ANJEC), Deputy Mayor for Harding Township, and Chairperson of the combined Citizens Advisory Committees, provided an update on committee activities.

David Grant, the Chairperson for Monmouth County, reported that meetings were well represented with environmental groups and he stated that the general message from the committee was in favor of the natural system. Many other committee members expressed their concern for shore protection and management methods. It was suggested that Monmouth County should have a more broad representation of interests at the meetings. Janice McDonnell, Working Committee member, is the contact person for Monmouth County.

Ken Smith, the County Chairperson for Ocean County, reported that his committee favored the use of beach replenishment. Mr. Smith created a checklist of shoreline issues for committee members to rank in importance; however, the checklist is currently being revised according to committee suggestions. A framework of four basic alternatives was also created:

1. Optimal beach construction and maintenance
2. Current resource funding for shore protection
3. Beach repairs when necessary
4. A proactive retreat strategy

Mr. Smith provided the Rutgers staff with a list of shoreline data sources. Susane Pata, Working Committee member, is the contact person for Ocean County and for general project information.

Mike De Luca, Chairperson for the Local Policy Advisory Committee and member of the Working Committee reported on the Atlantic/Cape May County Committees. The committee is composed largely of local government officials and back bay residents. There is not yet full participation within the committee, but ordinances from various communities have been collected. Major issues of concern are:

1. Dune management, i.e. fencing, creation/maintenance
2. Sea-level rise
3. Back bay issues
4. Beach cleaning

Dr. Stewart Farrell is the Chairperson and Mike De Luca is the contact person for the Atlantic/Cape County Committee.

The creation of an Eagleton Survey based on shoreline issues of concern and with emphasis on economics, was suggested in order to enable widespread input.

Bernard Moore, Supervisor for the State Shore Protection Program and the Administrator for the Division of Engineering and Construction, informed participants of beach restoration projects running from north to south in New Jersey.

Raritan Bay area: Two projects are currently under study:

1. A feasibility study covering Old Bridge, Keansburg, Middletown, and Cliffwood Beach
2. A reconnaissance study examining other areas in Raritan Bay that are not constructed.

Rumson Bridge (Sea Bright) to the borderline between Long Branch and Monmouth Beach: This beach nourishment project is 45% complete. The pumping of sand has stopped for the winter season but will resume April 1, 1995. The next contract for sand pumping, which includes the Rumson Bridge up to Highland Bridge, is expected to be awarded in Spring 1996.

Long Branch: The construction phase of this beach nourishment project will be undertaken during the fiscal year 1996 and it is estimated that sand will be pumped on the beach during the months of April and May 1995.

Deal to Asbury Park: This project is in the design phase and is scheduled for the fiscal years 1997 and 1998.

Asbury Park to Manasquan: This project was moved up an entire year and is presently in the construction phase. The first phase is the structural modification of groins and the second phase is sand pumping which will begin in May 1996.

Manasquan to Barnegat Inlet: This project is in the reconnaissance phase and it has been funded by the federal government during fiscal year 1995.

The Barnegat Light project, which was the first one completed by the USACE in 1987, needed an extension of the south jetty at Barnegat Inlet for a more stable inlet and more shore protection. This project has been successful.

Long Beach Island: The reconnaissance phase on this project has just been completed and it is in the second phase of work and studies. The Division of Engineering and Construction is scheduled to sign agreements with the USACE during the current fiscal year in order to move into the next phase which is the feasibility for in-depth engineering studies. Environmental issues and the economics of the project will also be studied.

Brigantine and Absecon to Great Egg Harbor Inlet: These two projects are into the second year of feasibility and they should be well underway within two years.

Great Egg Harbor to Peck Beach (South 34th Street): This was the third project signed on by the USACE. The sand emplacement was completed in December 1992.

Peck Beach, (South 34th Street) to Townsend Inlet: This is another project that was undertaken by the USACE and it is currently in the first stage of study.

Townsend Inlet to Hereford Inlet: The second phase of this study will be completed in about one year. It will then be ready for a detailed plan.

The Wildwoods: Reconnaissance studies of these areas are currently being done. There are wide beaches in this area, but they are beginning to settle.

Cold Spring Inlet to Cape May City: This was a beach restoration project and it was the second project undertaken by the USACE. This project was completed in June 1991.

Cape May City to Cape May Point: This project is in the feasibility phase. Beach restoration is important to this area because this area protects the Cape Meadows, which is a very important area to the State, serving as a natural stopover area for birds that migrate up and down the Atlantic flyway.

Delaware Bay: For the past three to four years, the Division of Engineering and Construction has been working with the USACE and the State of Delaware to study the effects of erosion and patterns in the Delaware Bay area.

2. PROJECT PROGRESS: JULY 12 WORKSHOP TO JANUARY 18 MEETING

The following have occurred since the last Steering Committee meeting on July 12, 1994:

- additions to the Steering Committee, consisting of: Mr. John E. Tunnell of the US Army Corps of Engineers; the Mayor of Brigantine, Philip J. Guenther; the Mayor of Mantoloking, Robert A. Roman; and, the Mayor of Beach Haven, P. Victor Sencindiver
- collection of information dating back to the 1981 Plan
- various meetings and project presentations
    - about 8 Citizens Advisory Committee meetings
    - one State and one Federal Briefing
    - an Environmental Roundtable Meeting
    - four American Littoral Society Meetings
- a few beach walks and tours led by elected officials

3. WHITE PAPER TOPICS

The "White Paper Topics" handout lists major issue areas that have been identified through:

- the July 12 Workshop
- Citizens Advisory Committee meetings
- informal contacts with various groups throughout New Jersey

The issues of interest are:

1. Coastal processes: newer information regarding sediment transport along the coastline and dune management issues
2. Engineered approaches in NJ: traditional and new approaches
3. Beach development:
    - cost/benefit analysis
    - control and limit of development
    - redevelopment and construction
    - effects of development/construction on beach dynamics
4. Socioeconomics: economics of approaches to shoreline management (A proposed economics study is presently being looked into.)
5. Public education: Project information will be incorporated into educational activities through White Papers, school administrators, and county shopping mall exhibits.
6. Federal Insurance Program
7. Beach cleaning: More information is needed for the possible development of a Fact Sheet or White Paper.
8. Public access
9. Biota effects: These areas are being researched:
    - the effects of beach nourishment
    - the effects of sand fill around jetties
    - the effects of increased development/construction
10. Historical approaches for shore protection/management in NJ: short and long term variations may help to get a perspective on rates of change (Some areas in the Shore Protection Master Plan of 1981 need to be updated.)
11. Back bay issues: This area may be developed into a full White Paper because of great interest within the Citizens Advisory Committees.
12. Private vs. public beaches
13. Sand harvesting and beach scraping
14. Model sand dune ordinance: An illustration of the variety of ordinances is planned so communities may decide on appropriate dune types for their reach.
15. Other State shore protection/management methods: i.e. North and South Carolina (The effects of State methods may be comparable to what may be utilized on New Jersey's shoreline.)

4. NEXT STEPS

The Final Report draft will be developed in approximately one year from now. The actual Final Report is due in April 1996.

Citizens Advisory Committees were asked to prioritize White Paper topics at upcoming Citizens Advisory Committee meetings for Fact Sheet/White Paper development. Citizens Advisory Committee members should attempt to get the New Jersey's Shoreline Future project on the agendas of outside meetings and any other activity and/or event that may help to disseminate project information.

Another General Meeting for Steering Committee members and other interested citizens will be scheduled for May or June 1995.

Meeting Attendees

Michael P. De Luca, WC
Thomas Gagliano, SC
Dr. Michael Bruno, SC
Anthony Mangeri, SC
Sally Dudley, SC/CAC Chair
Bernard Moore, SC
Steven Whitney, NJDEP
Dorina Frizzera, NJDEP
John Tunnell, SC
Dr. David N. Kinsey, SC
Stephen Kempf, Jr., SC
Dery Bennett, SC
Mark Mauriello, SC
Susane Pata, WC/IMCS
Daniel Collins, WC/IMCS
Tali Aldouby, WC/IMCS
Kenneth Smith, CAC/Chair
Jack Cadmus, CAC
Bruce Montgomery, CAC
Dr. Robert B. Abel
Dave Shotwell, CAC
Greg Farry, CAC
Peter Weeks, CAC
Scott Johnson, CAC
Alan Schwartz, CAC
Anna J. Scotti, CAC
M.P. Cloyes, CAC
Augusta Hogan, CAC
Robert A. Bowman, CAC
Michael Sorrentino, CAC
Robert Russo, CAC
Jeanne DiPaola, CAC
Kerry Lynch, CAC
Bill Towhey, CAC
John Luard, CAC
Dr. Susan D. Halsey
Ronald Rausch, CAC
David Grant, CAC/Chair
Megan McQuarrie, CAC
Gary Pieringer, CAC
Joan Walton
Aileen Barow, CAC
Daniel R. Altiere
Steven Ewing
W. J. Keeler, CAC
Paul M. Hesse, CAC
Steve Keehn, CAC
Betsy Colie, CAC
Joan Parent, CAC
Don Griesbach, CAC
Michael W. Huber, CAC
Stan Andres, CAC
Debbie McGrath, CAC
Larry McGrath, CAC
Leslie Gimenc
Fern Schoderer, CAC
Barbara Steele, CAC
Pearl Schwartz, CAC
Pieter Waldenmaier, CAC
Neale Merriam, CAC
Dorothy Merriam, CAC
Rosemary Brewer, CAC
Louise Usechak, CAC
Dr. Eleanor Bochenek, CAC
Paige Bedell, CAC

NOTE: WC: Working Committee; SC: Steering Committee; CAC: Citizens Advisory Committee

Appendix H

Coastal State Comparisons

DRAFT

COASTAL STATE COMPARISONS

New Jersey's shoreline is highly developed, and its coastal population is ever-increasing. This situation also occurs in other coastal states and, thus, New Jersey can benefit from their experiences. Florida, North Carolina, Delaware, and Virginia were selected for such a comparison because of their similarities to New Jersey. Each has a denselydeveloped segment of shoreline and associated population pressures. Moreover, these states share common geomorphologic characteristics with New Jersey.

Prior to the comparison however, it is important to recognize the importance of the federal coastal management program, and its bearing on the development of state coastal programs. Consequently, there is a brief overview of the Coastal Zone Management Act.

COASTAL ZONE MANAGEMENT ACT OF 1972

Until the late 1960s, decisions affecting coastal resources were made in piecemeal fashion with little coordination among federal, state, and local governments. As demand increased for use of the coastal zone, the number and severity of conflicts among diverse user groups also increased. Tourism, boating, fishing, recreation, energy production--all of these activities were competing for a finite amount of coastal space and resources. To address this conflict, Congress enacted the Coastal Zone Management Act (CZMA) in 1972, the goal of which was to "preserve, protect, develop, and where possible, to restore and enhance the resources of the Nation's coastal zone for this and succeeding generations," (16 U.S.C. S1452).

The CZMA created a partnership among federal, state and local governments to seek collective solutions to problems caused by competing coastal pressures. All activities within the coastal zone, and those activities outside this area but which affect resources inside the coastal zone, are now subject to the multiple use management regime established by the CZMA. Among the basic tenets which form the foundation of this legislation (16 U.S.C. S1452) are several which are directly related to coastal hazard issues:

- o Reduce the risk to life and property from coastal storms and erosion by directing coastal development away from hazardous areas.
- o Public participation in coastal decision-making.
- o Study and develop plans to address the effects of land subsidence and sea level rise on the coastal zone.
- o Protection of natural resources.

More than 95% of the nation's shoreline is managed under the CZMA through a network

of 30 states including New Jersey. To entice coastal states to join this voluntary program, the federal government provided two incentives: financial assistance to develop and implement state coastal management plans, and federal consistency authority--a tool which enables states to address the adverse effects of federal activities on coastal resources.

The New Jersey Coastal Management Program was developed in the 1970s by the state Department of Environmental Protection (NJDEP) and received federal approval in 1978 (bay and ocean shore region) and 1980 (Hackensack Meadowlands and tidal waters along the Hudson and Delaware Rivers). Under the CZMA, the state has exercised its authority to regulate land and water uses that have a significant effect on resources within the coastal zone. These authorities include the Coastal Area Facility Review Act, the Wetlands Act of 1970, and the Waterfront Development Law.

COASTAL HAZARD MANAGEMENT IN NEW JERSEY

Prior to discussing ways in which it is possible to apply coastal hazard management strategies used by other coastal states, it would be helpful to review the present program administered by New Jersey. New Jersey's coastal management program involves several state statutes. The primary piece of legislation for the state coastal program is the Coastal Area Facility Review Act (CAFRA). The objective of CAFRA is to ensure that development in the state's coastal zone is conducted in an environmentally responsible manner. The essential management mechanism for assuring compliance with this legislative objective is a permit system. A permit is required for "development" in a coastal area. Under CAFRA, a development is defined as the "construction, relocation, or enlargement of any building or structure and all site preparation...and [includes] residential development, commercial development, industrial development, and public development," (N.J.S.A. 13:19-3). In the legislative findings to the CAFRA amendments, the legislature "recognizes the legitimate economic aspirations of the inhabitants of the coastal areas and wishes to encourage development of compatible land uses in order to improve the overall economic position of the inhabitants of the area within the overall framework of a comprehensive environmental design strategy...". Permit applications must be in the form specified by the NJDEP, and must include an environmental impact statement.

The Wetlands Act of 1970 also is a key statute in New Jersey's coastal zone management program. This Act vests the NJDEP Commissioner with broad powers to regulate, restrict, and prohibit any activities that would adversely affect coastal wetlands. Permits from the NJDEP are required prior to undertaking any statutorily regulated activity in wetlands such as the discharge of dredged or fill material, driving of pilings, drainage or disturbance of the water level, or the removal of soil, sand, gravel, or aggregate. Any person who violates this statute is subject to a monetary penalty and liable for the cost of restoring any unlawfully altered lands.

In addition to CAFRA and the Wetlands Act, New Jersey has enacted other statutes which converge to create the state coastal zone management program. For example, N.J.S.A. 13:1D-9 empowers the NJDEP to 'formulate comprehensive policies for the conservation of

natural resources." N.J.S.A. 13:1D-9(f) directs the NJDEP to 'prepare, administer and supervise...regional and local programs of conservation and environmental protection." Also, the Freshwater Wetlands Protection Act directs the NJDEP to 'protect coastal wetlands and inland waterways," and the Waterfront Development Act empowers the NJDEP to review "all plans for the development of any waterfront." These statutes represent evidence of New Jersey's's commitment to protection of its coastal zone and coastal resources. Another aspect New Jersey's coastal program is the establishment of a "Shore Protection Fund." The fund is to be used for shore protection projects associated with the protection, stabilization, restoration, or maintenance of the shore," (N.J.S.A. 13:19-16.1). Although the state coastal plan has achieved its goals in many respects, improvement is needed in the area of coastal hazard mitigation.

A BRIEF REVIEW OF COASTAL HAZARD STRATEGIES USED BY FLORIDA, NORTH CAROLINA, DELAWARE, AND VIRGINIA

Among the various management issues confronting coastal states, enhancement of public safety through the implementation of coastal hazard mitigation mechanisms is paramount given the increasing coastal population and the dynamic nature of the coastline. Coastal erosion is a natural process which has been altering the shorelines of the earth since its formation some three billion years ago. During the past 100 years however, sea level has risen at an accelerating rate, coming up more than one foot, drowning the coastal margin. Approximately ninety percent of the U.S. shoreline along the east and gulf coasts is eroding, and a continued rise in sea level will accelerate erosion processes. Currently, given the extent of coastal erosion, many beaches no longer protect coastal residents from storms and floods adequately (Brockman, 1996). Although the unpredictability of the shoreline--which is a function of erosion and accretion--is "completely natural and acceptable for an undeveloped coast, [it] is considered thoroughly unacceptable where development has already occurred (Brockman, 1996). This section explores the major features and mechanisms adopted by the aforementioned coastal states which address public safety concerns associated with the changing shoreline.

Florida

The Florida Beach and Shore Protection Act is one of the most comprehensive shoreline regulatory schemes (Hwang, 1991). The Act establishes:

- o an erosion control line which fixes property boundaries prior to beach replenishment or restoration projects which build the beach seaward,

- o an interim coastal construction setback line of 50 feet of the mean high water line which remains in effect pending the establishment of a construction control line in a coastal county,

- o a construction control line in a coastal county which is a floating setback requirement based on the predicted effects of the 100-year storm surge on the beach-dune system, and

- o a floating setback based on the local rate of erosion.

The purpose of the erosion control line is to fix the property boundary before the state undertakes beach replenishment or a restoration project which builds the beach seaward. In 1970, the Florida legislature established an interim statewide coastal construction setback line. Construction within 50 feet of the mean high water line required a waiver or variance. The interim setback remains in effect pending the establishment of the coastal county's construction control lines. In 1971, the legislature directed the Department of Natural Resources to establish coastal construction control lines on a county basis along the sand beaches of the state. In addition to the coastal construction control line, there are restrictions on shoreline development based solely on the local rate of shoreline erosion. That is, the state of Florida implements a floating setback based on the local rate of erosion. After October 1, 1985, the Department of Natural Resources, or the enabled county agency, will not issue any permit for a structure which, based on the department's projection for erosion in the area, would be seaward of the seasonal high water line within 30 years after the date of the application for such a permit.

Florida also employs land acquisition as a shoreline protection mechanism. This is perhaps the most basic of the growth protection schemes. Quite simply, if a growing population does not own the land, presumably they can't harm it. The Land Conservation Act enables Florida to acquire beaches for both public use and conservation. This Act establishes, among other things, the Florida Preservation 2000 Act, a major land acquisition program dedicated to preserving the state's natural heritage. The Preservation 2000 Act proposes to raise approximately $3 billion over a ten year period with a significant amount of funding earmarked for the Florida Conservation and Recreation Lands (CARL) program, a program also established under the Land Conservation Act. Land can be acquired under CARL if it meets one of six public purposes including:

- o conservation and protection of environmentally unique land,
- o conservation and protection of lands (including coastal lands) within designated areas of critical state concern,
- o conservation and protection of native species habitat,
- o conservation and protection of important ecosystems,
- o land which provides areas for natural resource based recreation, and
- o preservation of significant archaeological and historic sites.

Additionally, the CARL legislation created an advisory council whose sole responsibility is the evaluation, selection, and ranking of state land acquisition projects on the CARL priority list.

At least 20% of the cumulative sum of CARL's portion of Preservation 2000 funds must be spent on the acquisition of coastal lands. Twenty-nine of the ninety-three projects on the 1995 CARL priority list qualify as "coastal lands." In addition to the "public purpose" criteria used to assess whether a coastal land should be acquired, CARL requires the following considerations to be relevant:

- o the value of acquiring coastal high hazard parcels, consistent with hazard mitigation and post-disaster redevelopment policies, in order to minimize the risk of life and property and to reduce the need for further disaster assistance,

- o the value of acquiring beachfront parcels, irrespective of size, to provide public access and recreational opportunities in highly developed urban areas, and

- o the value of acquiring identified parcels the development of which would adversely affect coastal resources.

The CARL program receives funding from several sources including bond proceeds, severance taxes on phosphate mining, excise taxes on real estate and financial documents, and revenues from the sale of state surplus lands. Of these, the Florida Preservation Trust Fund is the most important. The Trust Fund contributes more than 80% of the land acquisition revenue available to the CARL program. The Trust Fund could raise about $3 billion in bond funds over a ten-year period for the state's land acquisition programs. The amount of each year's funding, however, is contingent on legislative appropriations of each year's bond debt service, as no dedicated funding source was included in the Act. Of particular note is the provision in the Trust Fund Act which places program priority on public beaches in urban areas.

One final aspect of Florida's shoreline protection strategy is its comprehensive planning requirement. Florida requires a comprehensive plan of development of all municipalities based on the "area's needs, proposed improvements, and principles for future development." In their comprehensive plan, localities must include a coastal management element for the purpose of protecting the significant interest in the resources of the coastal zone. This element must be based on "studies, surveys, and data" and must include a land-use map of public access to beach and shore resources, an analysis of the effect of development upon the barrier islands (including the beach and dune system and other coastal resources), and a component "which outlines principles for protecting existing beach and dune systems from man-induced erosion and from restoring altered beach and dune systems." Localities also are required to establish a process for identifying and prioritizing coastal properties so that they may be acquired as part of the state's land acquisition program. Finally, localities are required to inventory and analyze the beach and dune systems "including past trends in erosion and accretion, the effects upon the beaches or dunes or shore protection structures, and identification of existing and potential beach nourishment areas."

In addition to local comprehensive planning measures, the state has enacted a comprehensive plan requirement "to provide long-range policy guidance for the orderly social, economic, and physical growth of the state." The Executive Office of the Governor must prepare a growth management portion of the state plan and includes "establishing priorities regarding coastal planning and resource management." The coastal element of the state comprehensive plan includes the accelerated public acquisition of coastal land to protect resources, ensuring the public's right of access to beaches, protection of coastal resources and dune systems from the adverse effects of development, prohibition of development and other activities which disturb the coastal dune system, and ensuring and promoting the restoration of the damaged coastal dune system.

Delaware and Virginia

As presented above, Florida has adopted several shore protection strategies which serve, either directly or indirectly, to protect the public from risks associated with coastal storms and hazards. A review of coastal statutes in Delaware and Virginia offer additional strategies which warrant consideration.

Delaware has enacted a variety of statutes which seek to protect coastal dwellers from hazards associated with storms. Four of the most notable state statutes include the Beach Preservation Act, Coastal Zone Act, Natural Areas Preservation System, and the Delaware Land Protection Act.

The Beach Preservation Act recognizes that Delaware's beaches are "valuable natural features which furnish recreational opportunity and provide storm protection for persons and property." One major objective of the Act is to mitigate the effects of beach erosion. To that end, the Act mandates that all structures devoted to beach protection are under the sole control of the state's Department of Natural Resources and Environmental Control (hereinafter the "Department"). The Act also establishes a permit system for any construction "seaward of the building line." Moreover, the Act establishes the "Beach Preservation Fund" to fulfill the purposes of the statute, but does not set aside any funds for these objectives.

The Coastal Zone Act recognizes that the coastal areas are the most critical areas for the future of the state "in terms of quality of life in the State." Consequently, the Act controls industrial development in the coastal areas. "Heavy industry" not in operation on June 28, 1971, is precluded in the coastal zone. "Manufacturing uses" in the coastal zone are contingent upon the issuance of a permit.

Section 7301 et seq. Of the Delaware statutes established the Natural Areas Preservation System, which charges the Department with the duty to acquire, and to hold in trust for the benefit of the people, an adequate system of natural preserves. The statute also creates the Delaware Natural Areas Advisory Council to advise the Department on the administration and preservation of natural areas.

Related to the Natural Areas Preservation System is the Delaware Land Protection Act. Primarily, this Act was enacted in response to the state's rapid growth and spread of urban development which "encroach[ed] upon, or eliminat[ed], many open areas." In order to protect open areas and preserve natural, biological and cultural resources, the Act requires that "each county government shall adopt and incorporate overlay zoning ordinances, guidelines, and specific technology-based environmental performance standards, design criteria and mitigation requirements...that shall apply to significant ecological functions..." Notably, in an effort to encourage landowners and developers to promote the objectives of the Act, the Act requires that:

> each county government shall evaluate density bonuses, credits or other incentives and allowances to landowners and developers for lands or resource protection rights thereto, to encourage the permanent protection of open space and/or any natural resource as governed by this title and elect such measures as they deem appropriate. The counties shall evaluate and consider enactments of measures to allow such bonuses, incentives and credits to have the ability to be sold, transferred or applied, as a matter of right, to other landowners to the maximum density permitted by the applicable zoning classification, so long as such action is consistent with the comprehensive plan of the county.

Virginia, like Delaware, has enacted numerous statutes which deal directly and indirectly with the various issues associated with coastal erosion. Of particular interest are those elements of Virginia's coastal erosion strategy which features the legislature's adoption of model "wetlands" and "primary sand dune" ordinances.

In Virginia, "[a]ny county, city, or town" may enact the model wetlands ordinance which was adopted by the state legislature. The model wetlands ordinance outlines a wetlands permit system which is to be administered by a local wetlands board and "shall serve as the only wetlands ordinance under which any wetlands board is authorized to operate" (**Appendix XXX**).

Any locality which adopts the wetlands zoning ordinance also may adopt the model coastal primary sand dune zoning ordinance (**Appendix XXX**). The ordinance regulates the use and development of coastal primary sand dunes. Any person who desires to alter a primary sand dune--other than for the purpose of conducting activities allowed under the ordinance--must apply to the wetlands board for a permit.

North Carolina

In 1974, North Carolina recognized the importance of its coastal resources with the enactment of the Coastal Area Management Act (hereinafter CAMA). In its legislative finding, the state general assembly emphasized that North Carolina's expanding population, industrial development and recreational desires of its citizens necessitated the establishment of a

comprehensive coastal management plan. CAMA "laid down a blueprint for developing land use plans for the twenty-county coastal area, identifying critical areas in need of protection (areas of environmental concern (AECs)) and installing a permit system to guide land development within these critical areas" (Heath and Owens, 1994). Heath (1994) points out that CAMA "has a record of administrative implementation that provides a framework for the fair and reasonable management of North Carolina's coastal resources." Given the success of CAMA, close consideration of its framework is appropriate. Moreover, Heath's assessment provides valuable insight into the elements which produce a successful shoreline strategy.

CAMA establishes a 15 member Coastal Resources Commission (CRC) which is selected by the governor. The principal duty of the CRC is to regulate the coastal area. The CRC is advised by the Coastal Resources Advisory Council which is comprised of members of coastal municipalities. Within this framework, each county with coastal regions must adopt a land use plan pursuant to the guidelines formulated by the CRC. If the county fails to submit a plan, the CRC will prepare such a plan.

With some exceptions, CAMA regulates "development" which is broadly defined in the statute as "any activity in a duly designated area of environmental concern..." The CRC is directed to identify and designate AECs and delineate the respective boundaries of AECs. AECS are placed into five general categories with each category containing an overall management objective, general use standards, and specific use standards. The categories are: 1) the ocean hazard system, 2) estuarine system, 3) public water supply areas, 4) natural and cultural resource areas, and 5) archaeological and architectural sites.

CAMA established a permit system for proposed development in designated AECs. That is, any person seeking to undertake any of the activities defined as "development" in an AEC must obtain a permit prior to commencing such development. The CRC issues permits for "major developments" defined as those developments that 1) require approval, license, or special permit from the state, 2) occupy more than twenty acres, or 3) consist of a structure larger than 60,000 square feet. Any development other than a major development is considered a "minor development," and permits for minor developments may be obtained from the appropriate local government if it has established an approved land use plan. CAMA also mandates that the public be informed of any proposed development.

Finally, CAMA creates land acquisition programs. As Heath notes, an "effective comprehensive coastal management plan must include a land acquisition program,." For example, the coastal reserve system outlined in CAMA provides for state acquisition of coastal lands for research and education.

Heath contended that the CAMA mandate for active intergovernmental coordination was an important innovation. That is, the CRC was charged with preparing guidelines that would be followed in preparing, reviewing and approving plans. Responsibility for actually preparing plans was assigned to the coastal municipalities. Heath suggests that CAMA did not result in

intense state-local conflict with respect to the mandate for comprehensive local planning for two reasons: 1) state guidelines focused on the framework of the plans and the process of their preparation, leaving most substantive policy decisions to local elected officials, and 2) state and federal funds were made available to cover most of the local costs in plan production. Nevertheless, Heath notes that plan quality is inconsistent; some merely meet the minimum requirements and are quickly shelved by the local government, and others contain vague generalities and equivocal platitudes rather than clear policy choices. Plans for adjacent local governments are sometimes uncoordinated and incompatible. Finally, Heath notes that most plans fail to consider the long=term issues of cumulative and secondary impacts of development, the overall carrying capacity of an area for development, and the sustainability of growth.

Heath concludes that the primary factors which made CAMA successful include an active partnership between state and local governments, the conduct of citizen board business in an open forum with full participation by affected parties, and consideration of the public interest in both development and preservation of the coastal region. He identifies the major issues facing CAMA in the future as coastal water quality, cumulative and secondary impacts of development, sustainable growth, and maintaining the character of the coastal communities.

FUTURE DIRECTIONS

New Jerseyans are challenged by the population demands placed on shoreline use. High population density continually jeopardizes the natural processes governing stability and change along our shoreline. One of the traditional approaches for managing shoreline systems in developed settings is to implement strategies on a municipality by municipality basis. This is certainly true in New Jersey where home rule has fostered a piecemeal approach to shoreline management. That is, New Jersey's plan is comprised of a multitude of statutes. Although these statutes seek to achieve the same end--informed management of the coastal zone--no overarching administrative framework exists to ensure that the coastal zone is managed on a consistent basis in a fair and reasonable manner.

As demand for use of the shoreline continues to grow, better information and more creative management strategies are needed to support continued resource use and stewardship. How can we assist coastal managers and train students to manage this natural resource in a manner that fosters access, mitigates the risk associated with coastal hazards, and preserves the ecological integrity of shoreline systems? An integrated, coordinated, management approach has been used by other coastal states to address shoreline processes which occur at regional scales (e.g., currents, sand transport) and are more effectively managed at these scales. Partnerships that transcend juridical boundaries are desirable and necessary to achieve this aim.

The adoption of a comprehensive planning approach--such as that used in North Carolina--arguably would provide the necessary oversight as well as a mechanism for consistent (integrated) coastal policy thereby ensuring safe and effective coastal management. The review of

the North Carolina approach suggests that a regional or holistic approach to coastal management is the most effective and reasonable method by which to manage our coast. Accordingly, as discussed below, a regional approach provides the best means through which an integrated system of coastal hazard mitigation can be implemented.

North Carolina's administrative framework provides a simple, yet effective example of how to implement a comprehensive planning statute. Likewise, a single state entity should be charged with the sole responsibility of managing the New Jersey coast. This state "division" should establish the existing citizen advisory committees as a means to receive local input on coastal issues relevant to their respective regions. This is discussed in detail in Section .

Consolidation of coastal hazard management efforts within state government is supported by a recent review of the state's coastal management program conducted by the National Oceanic and Atmospheric Administration. Presently, coastal management efforts are divided among several divisions at NJDEP (Office of Environmental Planning, Bureau of Coastal Engineering, and the coastal permit group housed in the Office of Land Use Regulation) and the Office of Emergency Management and Preparedness of the N.J. State Police. This piecemeal approach to coastal management in New Jersey needs to be reorganized to manage and service a new regional approach that relies on operation and support of the Citizen Advisory Committees. Reorganization should include the establishment of well-defined objectives that are coordinated through a single office. Establishment of one state entity for this responsibility could reside at what is now known as the Office of Environmental Planning. This office currently manages federal funds allocated for coastal zone management and possesses a great deal of expertise on coastal issues. In addition to shifting regulatory and mitigation responsibilities to this office, a liaison must be established with the State Planning Office to ensure that coastal management policy is incorporated into the N.J. Development and Redevelopment planning effort. Consolidation will simplify and enhance coordination of state management efforts.

The state coastal "division" would create coastal policy goals to be addressed by the citizen advisory committees with coastal hazard management strategies developed in the regions. That is, the state would acknowledge that although coastal policy is formulated at the state level (based largely on input from each region), each region has broad authority to address its particular coastal issues at a local level within the statutory framework. In other words, the program must ensure that there is a partnership between state and local governments regarding development of coastal management policies.

The "division" should also manage a coastal lands acquisition program (such as the recently enacted Blue Acres program) which sets guidelines for land acquisition and establishes a "priority" list for land acquisition. This is particularly important since many opportunities for acquisition occur after a storm event. Finally, the "division" should establish and maintain a public information/outreach program pertaining to coastal issues. Specific elements of such a program are presented at **Section...on Education.**

Within this general framework, coastal hazard mitigation measures could be implemented effectively on both state and local levels. For example, as noted in the Florida discussion, the "division" could implement a comprehensive coastal planning requirement, particularly with regard to the dune/beach systems and coastal erosion on both a state and local level. Also, a statewide coastal land acquisition program would ensure that high hazard erosion areas, as identified by local governments, are placed on a state "priority" list. Further, as in Delaware, a program could be implemented which provides incentives (such as density bonuses and credits) which encourage coastal landowners and developers to refrain from building in high hazard areas. Simply put, a single state entity would seek to ensure that coastal development and the preservation of coastal areas are conducted in the public interest on the basis of a strong public participation process.

For this to be effective, participants must have a clearly defined role in the decision-making process where citizens and government solve problems together. Responsibilities should include citizen oversight and monitoring, meetings called jointly by government and citizen groups, and funding to hire technical consultants and/or to implement projects. This recommendation is presented in more detail at **Section** .

The role of the citizen advisory committees would not duplicate that of the N.J. Beach Erosion Commission, which consists of legislators and technical experts appointed by the governor. The Commission prepares an annual report on the status of beach erosion throughout the state whereas the citizen advisory committees, in addition to the purposes stated in **Section XXX** , ensures direct public input into the decision making process.

Appendix J

Project Bibliography